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Diary Dates

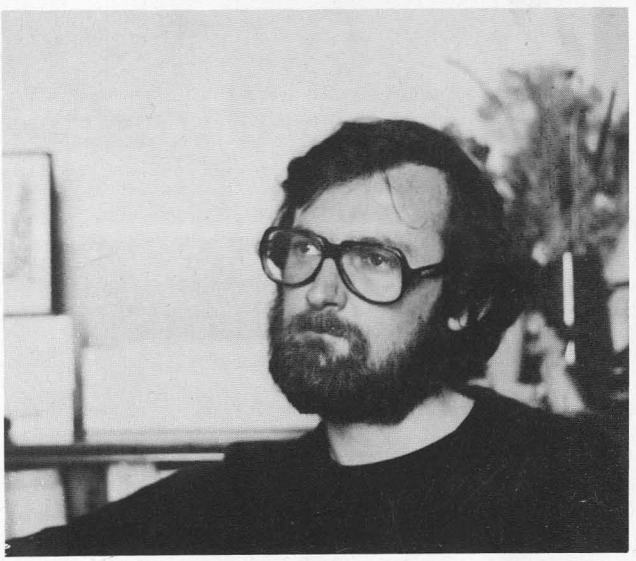
Spring Conference 1984
York is the venue for The Spring Conference April 13-15. The programme arrangements are similar to those of previous successful conferences beginning with dinner on the Friday night and continuing through until Sunday lunchtime, with the Saturday afternoon free to enable members to explore the many historical attractions of the city. The conference will take place in the Lady Anne Middleton's Hotel, Skeldergate, York, only a few minutes walk from the city centre. Cost for the weekend: Twin Room £50 per person; single room £55. Programme details and application forms available from the Secretary B.S.H.P. 36 York Place, Edinburgh EH1 3HU.

British Pharmaceutical Conference 1984
The conference is to be held in Southampton and the History of Pharmacy Session will be held on Thursday September 13 at 2.15 p.m.

A Directory
The Women's Committee of the History of Science Society, U.S.A. maintains a directory of women active in the history of science, medicine, or technology. It was first published in 1977 and revised in 1982. A new edition is now being compiled, and it is intended to issue revised editions in alternate years.

The idea is to develop an international network of women historians. The compilers hope that the directory will be used by directors of conferences and lecture series, and by independent and institutional scholars who wish to develop ties.

Women whose field is the history of science, medicine, or technology, who would like to be included in the Women's Directory are invited to apply for questionnaires from: Prof. Alice Stroup, Women's Roster, Department of History, Bard College, Annandale-on-Hudson, New York 12504, U.S.A.



Dr. Lindsay Campbell Howden

Pictured above Lindsay Howden has been appointed as assistant secretary, Scottish Department Pharmaceutical Society in place of Mrs. Linda Cameron who has retired. Dr. Howden was born and brought up in Kirkintilloch, Dunbartonshire and educated at Lenzie Academy and Strathclyde University from where he graduated in 1971. After a pre-registration year in hospital in Glasgow, he researched in pharmaceutical microbiology under R.M.E. Richards and R.J. McBride at Heriot-Watt University, Edinburgh, earning the degree of PhD for his work on the cell envelope of *Pseudonomas aeruginosa*. Dr. Howden then worked at the Western General Hospital in Edinburgh for 8 years, working under the specialities of clinical pharmacy and latterly running North Lothian Drug Information Centre.

Lindsay Howden is married and lives in Edinburgh; his interests are photography, reading, theatre and hill walking.

At the BSHP committee meeting on February 2, the chairman welcomed Dr. Howden and also expressed the committee's appreciation for the enthusiastic help Mrs. Cameron had given to the BSHP.

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The Great Fire of 1666*

By ROSEMARY WEINSTEIN

The Great Fire of London broke out on the morning of Sunday, September 2nd. The wind was strong, the summer hot and dry, and the flames spread rapidly through the closely-packed timber-framed houses. Burning fiercely for four days the fire laid waste all the City from the Tower to the Temple and from Smithfield to the Thames — 436 acres — four-fifths of the country's greatest port and city, at a loss calculated at over £10 millions in the currency of the time.

Four hundred streets, 13,200 houses, 87 city churches and St. Paul's Cathedral were destroyed; in addition 44 company halls, the Royal Exchange, the Custom House and the Guildhall. Flames made the night as light as day for ten miles around London. But the holocaust claimed only eight lives.

Rebuilding of the major buildings took about 20 years; the chief architect Sir Christopher Wren designed and constructed 52 new churches, St. Paul's Cathedral and the Custom House in his own classically-derived style, but the citizens rebuilt their homes very rapidly — by 1670 most private rebuilding was near completion.

Fires were a permanent hazard of London life. During the 17th Century city authorities showed an increasing awareness of the danger. Parish officers organized existing fire-fighting equipment: leather buckets, hooks for pulling down burning timber and thatch, ladders and hand squirts. The City repeatedly republished pamphlets of precautions against fires which stressed the communal response expected by each ward, but they went unheeded and unenforced. Householders were ordered to bring water from local conduits, the lead and wooden water pipes in the streets, and from the water-wheel driven pumps at London Bridge. Primitive fire engines were known but not widely used in London until after the Fire.

Such precautions proved futile in severe fires, like that of 1633, which destroyed buildings on the north end of London Bridge. The gap left there provided a fire break in 1666 preventing the Great Fire from spreading to Southwark. Samuel Pepys was an eyewitness to that devastating event and graphically described the fire's course in his Diary:

> "2nd September 1666. Jane called us up about three in the morning, to tell us of a great fire they saw in the City... By and by Jane comes and tells me that she hears that about 300 houses have been burned down tonight by the fire we saw, and that it is now burning down all Fish-street, by London Bridge. So I made myself ready presently, and walked to the Tower. The Lieutenant of the Tower tells me that it began this morning in the King's baker's house in Pudding-Lane, and that it hath burned down St Magnes Church and most part of Fish-street already. So I down to the waterside, and there got a boat, and through bridge and there saw a lamentable fire. Poor Michell's house, as far as the Old Swan, already burned that way, and the fire running further, that in a very little time it got as far as the Steele-yard, while I was there. Everybody endeavouring to remove their goods, and flinging into the river, or bringing them into lighters that lay off. Poor people staying in their houses as long as till the very fire touched them, and then running into boats, or clambering from one pair of stairs by the waterside to another.
>
> ...When we could endure no more upon the water, we to a little ale-house on the Bankside, over against the Three Cranes, and there stayed till it was dark almost, and saw the fire grow. And as it grew darker, appeared more and more, and in corners and upon steeples, and between churches and houses, as far as we could see up the hill of the City, in a most horrid, malicious flame, not like the fine flame of an ordinary fire. Barbary and her husband away before us. We stayed till, it being darkish, we saw the fire as only one entire arch of fire from this to the other side of the bridge, and in a bow up the hill for an arch of above a mile long: it made me weep to see it. The churches, houses, and all on fire, and flaming at once and a horrid noise the flames made, and the cracking of houses at their ruin."

The Lord Mayor, Sir Thomas Bludworth, misjudged the size of the fire and proved ineffective. Citizens fearing the loss refused to have their property pulled down to create fire breaks. The King then put the Duke of York in command of the fire-fighting squads and himself rode round distributing money to encourage them.

Tuesday the 4th was the worst day: Cheapside was destroyed and St. Paul's caught fire. Demolition gangs started blowing up houses to stop the flames. By Wednesday the disastrous strong east wind had fallen and the fire breaks were proving effective. By midnight the fire was checked but the medieval city had gone for ever. Fires continued to smoulder until the New Year.

"The hand of God upon us, a great wind and a season so very dry". Such was the verdict of the City fathers on the causes of the Fire. Although rumours of Papist and foreign plots against the city had circulated and many foreigners been attacked — one Frenchman, Hubert, being hanged at Tyburn for arson — the initial outbreak was due to the carelessness of Thomas Farriner, the King's baker in Pudding Lane in not banking down his fire properly before going to bed.

Almost 200,000 people were homeless. John Evelyn saw, "the poor inhabitants dispersed all about St. George's (Southwark), Moorfields, as far as Highgate and several miles in a circle, some under tents, others under miserable huts and hovels". Two hundred pupils from Christ's Hospital were evacuated to Islington.

Urgent action was needed: all towns and villages had to receive refugees and allow them to work — the bailiffs of Ipswich for example, were instructed by the Privy Council in February 1668 to allow two London confectioners to exercise their trade; emergency arrangements were also made for the distribution of food. The Lord Mayor organized a disaster fund and subscriptions came in from all over the country. The Court of Aldermen and the Court of Common Council immediately took measures to re-organise City life — labourers, for example, were paid 4s. (20p) each, nightly, to clear the Bridge approaches and restore communications with the Surrey bank.

Evelyn and Wren wanted London rebuilt on new and magnificent lines like Paris. Both produced plans with St. Paul's standing in splendid isolation on Ludgate Hill, wide straight streets, piazzas and views of the Thames. It never happened: impoverished citizens and institutions whose wealth lay largely in property rents were losing money daily, and unprepared for change, were anxious to start rebuilding. They insisted that each should retain his own site, which meant that the original street plan had to be retained and the new and startling plans rejected.

Rebuilding laws were passed by Parliament on February 8, 1667 and a Fire Court set up at Clifford's Inn, Fleet Street to deal with disputes between landlords and tenants. Men had to rebuild within three years, or else the Corporation could sell the sites and pay the proceeds to the owners. All new houses had to be built of brick or stone instead of wood to reduce fire risk, the number of storeys was specified according to the width of the street or lane on which a building abutted: four storeys high in main streets like Cheapside, were to have a continuous roughly uniform facade; street signs

*Abstract from a paper given at the History of Pharmacy Session, British Pharmaceutical Conference, London, September 1983.

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The Great Fire of London 1666, painted about 1666 by a contempory Dutch artist. Below: Detail from the painting (courtesy Museum of London).

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were to be set into walls, not hung out. The appearance of this new, elegant and relatively hygenic London was to leave a marked influence on later provincial town development.

Although most private rebuilding was near completion in 1670, 3,423 houses, "near the sixth part of the whole City and Liberties" remained uninhabited and the City's census of 1673 showed that a quarter of its citizens had still to return. Some corporate buildings — Guildhall, Blackwell Hall, the Royal Exchange and Custom House were all functioning again by 1671.

Officials surveyed each site and recorded its boundaries before a rebuilding licence was issued. The Corporation were given power to purchase strips of land for street widening — Fleet Street, for example, was widened up to 50 feet and Thames Street to 30 feet. To the Drapers' Company they paid £1,500 for the purchase of land in Honey Lane to provide a new market, at Bow churchyard, to widen Cheapside, and to widen Watling Street and Queen Street amongst others. The street widening cost was met partly by the 1s. tax on each ton of coal brought into the port, granted by the Rebuilding Act of 1667.

Other major improvements were an open quayside (with warehouses 40 feet back from the waterfront) from the Tower to Blackfriars; a grand approach from the river to Guildhall by the creation of New Queen Street; the Fleet Ditch dredged and straightened to form a canal navigable to Holborn Bridge, and pedestrians protected by raised pavements for the first time.

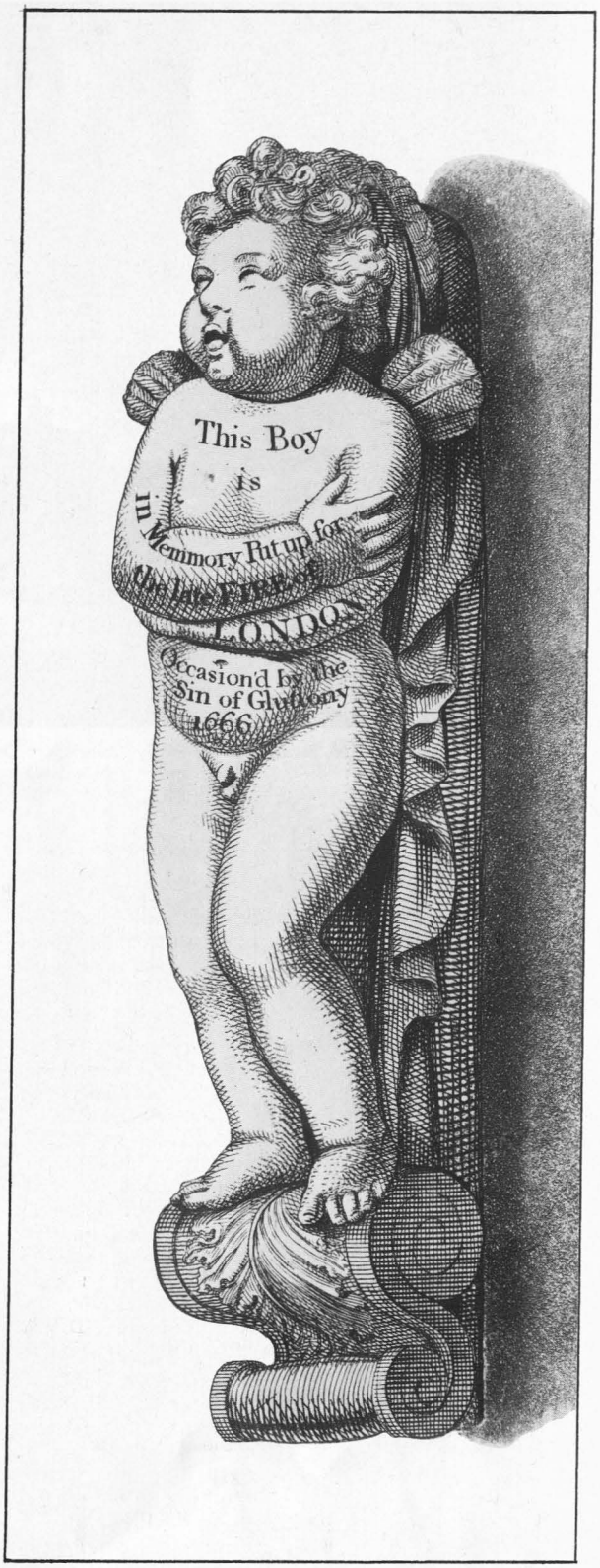
Although Wren's plan for a new London had been rejected, as Surveyor to the King's buildings his was to be the most distinctive architectural contribution to the appearance of post-Fire London, particularly in his churches. Wren had to recommend which of the gutted churches should be rebuilt. Once a parish had obtained a warrant and sufficient funds Wren produced a design for their new church. Wren started work on the churches in 1670 designing and constructing fifty in the City and four outside. St. Bride's Fleet Street was the first City church to be reconstructed in December 1675 at a cost of £11,430 5s. 11d. In addition to parish funds money also came from the 1670 tax on coal (granting the right to collect 3s. per ton on all coal brought into the Port of London) of which one half was used for the churches, one quarter for St. Paul's and one quarter for City improvements.

Right to work

Work on St. Paul's began in 1675, Wren receiving £200 a year. Fifty thousand tons of stone were specially quarried at Portland, Dorset, and shipped to London. The Rebuilding Acts granted non-freemen exactly the same right to work as City company members, so creating an influx of provincial craftsmen and labourers. To prevent profiteering, the prices of building materials were fixed. St. Paul's, the biggest enterprise of Restoration London, was not completed until October 1710. Wren's secular work included the Custom House (rebuilt 1671) and a classical facelift for Guildhall.

In the hopes of preventing another such disaster, the City passed "An Act for Preventing and Suppressing of Fires within the City of London and the Liberties thereof, 1667". This divided the City into four quarters, each to be provided at public expense with eight hundred leather buckets, fifty ladders, twenty-four pickaxes, forty shovels and two handsquirts for each parish. In addition, the twelve principal Livery Companies had to provide one engine each. A bellman was paid by each quarter to patrol the streets from 10 p.m. to 5 a.m. Compensation was to be made to those whose houses were blown up and a veto exercised on the storage of inflammable goods. But skilled fire brigades were still not thought of — the Act only provided additional equipment and fire prevention legislation.

New fire-engines developed after the Fire, but were still crude — such as Keeling's plunger pump on wheels (worked by two long levers) with a cistern below. Keeling was manufacturing and selling the engines in his workshop in Blackfriars in the 1670s and the type remained in use until the 19th Century. Dutch "sucking worms" — drawing in water from the mains by suction through a hose (an



The Fat Boy, Cock Lane, Smithfield: This statue was put up to mark where the fire ended to the west of the city. (Photograph courtesy, Museum of London).

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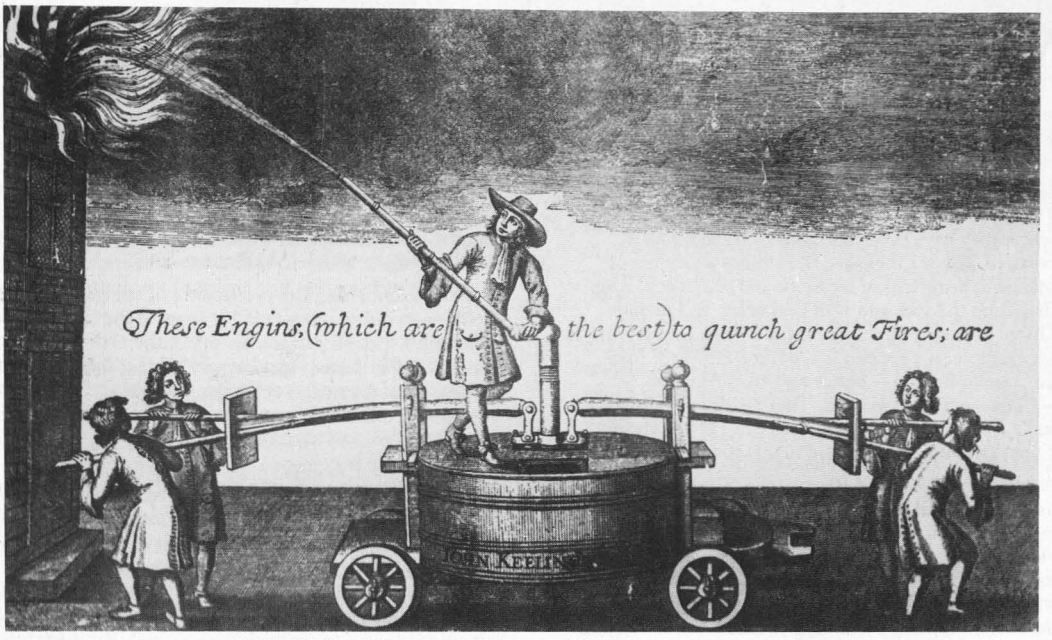

John Keeling's fire engine (Photograph, courtesy British Museum).

advance on the bucket-filled Keeling engine) influenced late 17th Century fire-engine designers such as Lofting.

Citizens who had lost their livelihoods wanted protection in the event of further fires. The speculator Nicholas Barbon, who introduced a system of insuring properties in 1680, filled the need. His joint stock company, the Fire Office (later the "Phenix") prospered. By 1690 it was estimated that one in ten London houses was insured, and as early as 1684 lead marks were in use by the Friendly society to identify subscribers' properties.

Not until 1940, when German bombers set the City ablaze was London to see another fire on the scale of the Great Fire of 1666.

Will of Dr. Johnathan Pereira MD., FRS., FLS. (1804-1853)

By LESLIE G. MATTHEWS

The activities of Dr. Johnathan Pereira at the Aldersgate Dispensary were mentioned in the *Pharmaceutical Historian,* Sept. 1983, Vol 13, No. 3. He was apprenticed to an Army surgeon and by the age of 19 was appointed apothecary at the Dispensary. He then qualified as a Licentiate of the Society of Apothecaries, published several papers, and a translation of the *London Pharmacopoeia 1824* with notes on its preparations. In 1832 he was appointed Professor of Materia at the reorganised Aldersgate Medical School and also lectured in chemistry at the London Hospital. He then became editor of the *London Medical Gazette.* Seeking an appointment as assistant physician at the London Hospital he was told that the qualification L.R.C.P. was needed and he was successful in obtaining that qualification after only seven days study, thus securing the post. He gained an M.D. at Erlangen University in 1841. When the Pharmaceutical Society's School of Pharmacy was opened in 1842 Pereira was invited to become Professor of Materia Medica there. It was not long before he began to acquire an international reputation as a pharmacognocist. His death in 1853 was a loss to pharmacy.

From a copy of his marriage certificate, kindly provided by our member, Mr. William H. Boorman, we find that on September 1, 1832 Johnathan Pereira was married by licence to Louisa Ann Lucas of Winchester at St. Thomas Church, Winchester. Pereira's Will (Public Record Office 1853 132 Prov 11/2167) made 14 July 1843, when he was living at 47 Finsbury Square, London, was proved on February 15, 1853 by his wife as sole executor.

The Will itself tells us little. Apart from a token £5 for his brother Jeremiah, the whole of his estate, real and personal, was left to Pereira's wife Louisa. The estate included houses, goods, carriages, and monies.

A better knowledge of his estate is in a Codicil to the Will dated April 3, 1849, at a time when he thought that his wife would predecease him. In fact his wife outlived him and the Will stood and the Codicil never became operative. From it we learn that he would have appointed Trustees and that his estate and his bequests included properties in Winchester as follows: three freehold houses, one in High street, one in Southgate, and one in the Soke, and a leasehold house on the Weirs. Dr. Pereira had advanced sums amounting to over £5000 to his wife on two properties he held. He had also shares in the South Western Railway Company (amount not stated). This suggests that in all he left some £15,000 to £20,000 with royalties on his books. As the Godicil never became operative, all his estate went to his wife and the intended bequests failed.

Notes

The Pereira Medal, the most important of the Pharmaceutical Society's prizes, was first awarded in 1876.

There is mention of an Italian remedy attributed to Dr. Pereira or at least sold under his name. The bottle, C. 1856, bore its name in raised letters. Watson, B. and Betty, in *Medicine in Glass* 1973, 66, 130, comment: "His remedies were an open secret and it is believed that a New York City medicinals formulator was responsible for the pictured bottle."

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Doctor's Recipe Book?

By JOHN R. GUY*

Within the last two years the books which comprise the library of Bath Abbey have been transferred to the safe keeping of Wells Cathedral, where they have been catalogued, cleaned, and if necessary, repaired. Among them are 18 volumes which are of particular interest to historians of medicine and pharmacy. Almost all of these date from the 16th and 17th Centuries, and include editions not listed among the holdings of the British Library. In the collection, for example, is a Froben first edition (1556) of Joâo Rodriguez de Castello Branco — better known as Amatus Lusitanus — *Curationum medicinalium*. There is also an edition of Pietro d'Argellata's *Chirurgia* dated at Venice in 1520 — eleven years earlier than any other edition held in this country that I have so far traced.

One small volume is in manuscript. The pages measure on average 15.1 cm. x 9.8 cm., and the whole is sturdily bound in leather, the binding seemingly contemporary with the contents, which on internal evidence are of the middle years of the 17th Century. A large proportion of the manuscript is in a hand which indicates a date contemporary with the transition from the formal 'secretary', which emerged as a distinctive towards the middle of the 16th Century, but which tended to fuse with the italic from the early part of the 17th Century onwards. The calligraphic style is acceptable for a date within the period of the 1640s or 1650s. However, the manuscript also contains notes made in a rounder and freer hand, which at first sight seems to be that of a different writer, but which may, in fact, be the same man using a freer script for rough notes — and these are in a class of random jottings. Alone in the volume these rough notes provide us with dates, for one page towards the end contains the entries:

> 1665. London. Then began the great plauge in the reinge of kinge Charles the second.
> 1666. London. The great fire began the 2 of September in the same king's reinge. [1]

Internal evidence is consistent with a dating from that period of history covering the Civil Wars, Commonweatlh and Restoration.

The contents of the volume are not homogeneous. By far the most important is a series of 58 numbered medical recipes, written out in English. Most begin on the *recto* of the leaves of the manuscript, but some commence on the *verso*, including recipes which are not given numbers. The total in this series is therefore in excess of 60. This series begins, without introduction, on the third leaf of the volume. [2]

After this series there follows a somewhat curious section of some twenty-eight leaves of manuscript. [3] These pages are in Latin, and seem to contain notes of, or extracts from, works of philosophy. No attempt has been made to date to either identify them or isolate their source. These extracts are mainly short, sometimes no more than one-line headings on an otherwise blank page.

After the Latin section, comes an incomplete index of the earlier medical recipes. [4] Only 22 of the recipes are, in fact, listed here, in the order in which they appear in the text. The placing of an index at this point in the manuscript seems somewhat curious, occuring as it does late in the volume as bound, but by no means at the end of it. It is clear from both the ink and the handwriting that this abortive index is contemporaneous with the recipes, but that is all that can be said about it. Following the index there are several more pages of recipes in the same hand. [5] They are a miscellaneous collection. For example, among the numbered recipes listed in the index can be found those for "spirit of tartar", "oil of nutmeggs", and "aqua fortis". [6] Those which follow the index have such headings as "to make one laxative", "a medicine for ye bloody flux", 'ffor a cough", and "to make a quick drying powder for haire". [7] The volume ends with instructions on how to construct a furnace and lambeck, with a sketch of the same drawn in lead pencil, [8] followed by one final recipe, the whole concluded with a monogram, to which I shall return later.

Before discussing the provenance of the manuscript, it is worth looking in rather more detail at some of the recipes themselves. Though a specialist in the history of the 17th and 18th Centuries, I am not a pharmacist, and have no measurable knowledge of pharmacography or pharmacognosy. I would hope that readers of this paper could tell me more about the significance of these recipes and their contents than I can tell them.

OILE OF CLOVES [9]

It is drawne in a copper lembick with a worme as oile of cynamon is and beeing an heavy oile it will sink to the bottom as yt doth. The next day after you have drawne the oile you may put spirit of wine to it and draw it off againe. But when you draw the oile, as soon as you have drawn a gallon of water, put it up againe and so continue till you have drawn or put up seven or eight gallons. The oftner you do it, the more oile... The spirit beeing sweetened is good to give to old weak people (?) that have *weak* stomachs.

PRECIPITATUM RUBRUM [10]

Take aqua fortis 10 Quicksilver tb ß put it in to a pt colts head let it stand 24 hours (or you may doe it presently but not soe well) place it in sand in a subliming kettle, make a gentle fire under it till all the aqua fortis is evaporated, then make a strong fire that the glass may bee red hot at the bottom, then it will thunder. Let it stand till it be colde then breake or cut the glass and take it out then keepe the red that is well calcined apart, put it in a glass for your use... It is to rake proude flesh off from wounds the powder of it beeing put on them.

OL. EX OSSIBUS HUMANIS [11]

Take som of the arme bones, leggs and ribbs of a malefactor, hangd in chaines lay a bed of coles in a reverberating furnace, then lay all these bones on the topp of them, then fill up the furnace to the brime with charcoale, and kindle coales on the topp. Let it stand soe for 2 hours or more till the bones bee calcined then hand a pott such as you use for ol. philosophor. put into it a quart of oil and the bones hott then let it stand 24 houres; then take a glass retort of a pottle and pour out the oile and when you have broken the bones in a mortar put all into the retort and distill it as you do ol. philosophor.

Excellent for aches and palsyes, to anoint. The oile drawes the fixt salt and therein lies the vertue.

Finally in this section, some of the recommendations — probably a better word here than recipes — which occur towards the end of this volume. [12]

> A medicine for ye bloody flux. Take as much fine linen cloth as will make a suppositry being wrapt round, then wet it in aqua vitae or aq: composita and put that into the fundament.
> Another. Take a pint of red wine, and the yolks of five new laide eggs, a good quantity of cynamon and a little sugar, the pith of a pomegranett dryd and beaten to a fine powder, a good quantity, and boil these in a pewter dish or a chafin dish... till it be somewhat thick, let the party eat of it morning and evenings, and as often as he will.
> ffor a cough. Eat going to bed two or 3 figgs stuft with mustard pudr: (powder — or seeds?)

Whatever its subsequent use, it does not seem originally to have been intended as a notebook. The recipes are too detailed, and too neatly arranged for this. They may have been transcribed from another source or variety of sources, printed or manuscripts, or be

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the result of instruction or observation. Some, at least, may even be the result of practical experiment. The small size of the volume would indicate that the intention was to provide the writer with a handy and readily accessible work of reference, small enough to have been slipped into the pocket, or into a saddle-bag. However the volume itself does not show evidence of hard use in this way. The pages are not dirty or stained, there is only slight evidence of damage to the paper — and that of a kind more indicative of insect infestation or mice nibbling at the edges than the kind of wear and tear one might expect on a *vade mecum* in constant use. On balance, it does not seem to be a much-travelled volume, as might, perhaps, be expected had it belonged to a young and aspiring physician in a "riding practice".

For laboratory use?

It seems to have been mainly intended for the use of its compiler. In relatively few of the recipes is there any indication as to their purpose — the ailment that they were intended to relieve or to cure. In the main they are not "model prescriptions" which could be copied out by a physician for compilation by a local apothecary. The volume has more the character of a laboratory reference book.

Not only does the volume contain a sketch of a furnace, and instructions on how to build it, but many of the recipes include references to the use of pestle and mortar (i.e. 'pounding'), to distillation in a retort, and to the furnace itself. These recipes presuppose the existence of some kind of laboratory for the preparation of the medicines. It could, therefore, be the laboratory notebook of an apothecary or of a provincial physician. An example of such was Dr Claver Morris of Wells, [13] who flourished a generation or so later than the writer of this notebook. Morris was born at Bishop's Caundle in Dorset in 1659, the son of the rector, and died at Wells in 1727, being buried in the cathedral. He was educated at Oxford, graduating M.B. in 1685 and M.D. in 1691. He became an extra-licentiate of the Royal College of Physicians in 1683, and practised at Salisbury before settling at Wells. Morris's surviving papers show that he spent a good deal of time working in his own laboratory, which was equipped with the kind of furnace and stills mentioned in the manuscript under consideration here, and where he dispensed drugs, often compounds of his own devising. Neither was he above compounding cosmetics, and "hair butter", face and eye lotions are all mentioned in his papers. Here, perhaps, is the parallel for the "quick drying powder for the haire" and the "cement for glasses" which are to be found in the Bath Abbey manuscript. Bearing this in mind, and recalling that the writer of the manuscript interested himself in philosophy, it seems possible that this volume is the laboratory notebook of an educated mid-17th Century provincial physician used to dispensing his own drugs. Are there any contenders?

For some time the manuscript has been believed to be that of Robert Pierce, the Bath physician who was born in 1622 at Combe Hay near that city, the son of the rector of the parish, and who died in Bath in 1710. [14] Pierce was educated at King Edward's School, Bath and Winchester College before going up to Oxford at the age of 16 in 1638. He graduated M.B. in 1650 and M.D. in 1661, settling in practice at Bath in 1653 and remaining there until his death. The parallel social position and education of Pierce and his much younger contemporary, Claver Morris, is quite striking.

Pierce took some time to establish himself, and seems to have practised for a while in Bristol and near Wookey (very close to Wells) before moving to Bath, where he began a 'riding practice' and gradually worked his way up to a position of some distinction in the city. Pierce's book, *The History and Memoirs of the Bath*, [15] first published in 1697 but best known in its 1713 edition, contains a long series of case-histories of his patients, and Pierce is, from that evidence, credited with being probably the first English writer to note the occurence of acute rheumatism as a sequel to scarlet fever, and to describe a lympho-sarcoma of the pericardium. Among those who referred patients to him were Sir Charles Scarborough and Richard Lower, and many patients of distinction and members of the aristocracy lodged with him at his house.

What evidence is there to link Pierce and the manuscript notebook? What there is, perhaps, is best considered under two heads, the external and the internal. The former, it can be said at once, is very slender.

When established at Bath, Pierce lived at, and practised from, the now vanished Abbey House, which adjoined the church, and was a remnant of the former monastic buildings. It was there that influential patients stayed with him whilst undergoing treatment, and Pierce himself described the convenience of his residence, how there was a door from his garden leading into the abbey church, and that the house itself had a private gallery leading directly into the King's and Queen's Baths. [16] It was, as far as I have been able to trace, in an article on the history of the Abbey House, published in a rather obscure local journal, *The Beacon*, in April 1905 that an association was first made between Pierce and this manuscript, which was then, of course, still housed in the abbey church. [17] Inside the volume there still remains a typescript card, obviously prepared for some now long-forgotten exhibition of the Abbey library, which without equivocation ascribes the manuscript to Pierce. However, no authority is given, and as the card evidently post-dates the *Beacon* article by a good many years, no weight can be given to it. Apart from this, and the fact that Abbey House and the abbey church were in close enough association to enable a manuscript to migrate from one to the other, there seems no "external" evidence to connect Pierce and the manuscript. According to the *Bath Abbey Benefactors' Book* (now at Wells) [18] Pierce did give some books to the abbey library, but these were works of theology, and a French dictionary. He does not seem to have donated any medical works — or at least is not recorded as having done so.

Internal evidence

What then of "internal" evidence? This may be a little more convincing, though, admittedly, is rarely other than circumstantial. It is evident, first of all, from his recorded donations to Bath Abbey library that Pierce was interested in theology. This would really be expected of one who was a son of the parsonage and Oxford educated, and particularly when it is remembered that he lived in the age of John Evelyn, Robert Boyle and John Tillotson, and survived into the heyday of Sir Isaac Newton. The philosophical notes and/or extracts in the notebook could possibly be interpreted as slight evidence of Pierce's interests outside of medicine, but no weight can be put on it.

Secondly, it is obvious that Pierce had a sense of humour. Writing in his *History and Memoirs of the Bath* of his own ill-health in youth, which finally forced him from the Wookey area into Bath, he remarks "It is a scandalous thing in that Countrey for a Physician to be sick, much more a Reproach is it, to the whole Faculty, for him to die". [19] In a similar rather dry vein of humour, of Bath on his arrival there in 1653 he wrote, "There were three well reputed Physicians, constantly residing, besides several interlopers, both from Oxford and from London, and from other parts of the Nation, some with, others to look for Patients (as still there are, and will be, for where the Carcass is, there will the Eagles be gathered together".) [20] This rather picturesque style of speech is again in evidence in his assertion, concerning the contents of his book, "I shall only relate Matter of Fact, not medling much with Theories, or setting up new Hypotheses. He that does that, does (as it were) set up a Shrove-Tuesday Cock, for every one to throw at, without so much as paying Two Pence for Three Throws". [21] Is this, one wonders, the same man who scrawled across the first page of the recipe book the maxim "A merry hart is the life of the body," as a kind of motto, or philosophy of practice.?

A third straw to clutch at, in the internal evidence, is again related to Pierce's *History and Memoirs*... In the context of one of his case histories Robert Pierce reveals that at an earlier date in his practice — and, remember, this work was put together in his old age — it had been his habit to keep copies of some of his prescriptions. [22] From what he says it seems that these were loose sheets among his papers — a kind of record of *what* he had

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prescribed in particular cases, rather than a reference book of medical recipes. However, it is perhaps justifiable to pose the question: Was a man who kept copies of his prescriptions the kind of man who would have kept a reference book to assist him in the dispensing of drugs?

Robert Piece was evidently a reticent man when it came to his medical practice. His *History and Memoirs*... was published in old age — he was 75 in the year of the first edition, and his disclaimer on the first page may therefore have a grain of truth in it. He wrote:

> I have hitherto contented myself (as many greater, and more learned men than I have done) with a fair and cleanly Reputation, without Book, and should still have so done, had not the great, and not to be deny'd importunities of Friends (both Patients and Phyisicans) prest me so long, and so much that I could no longer withstand their Sollicitations. [23]

Nevertheless, having agreed to publish, he passed one self-denying ordinance, which may have satisfied his conscience, but is an irritation for us his readers:

> I shall not (in the least) Forestal, or prejudice the diligent endeavours of well designed Men of our Faculty, having not given the Copy of any one Prescription, used in any Case, in this my long Practice here, but have only hinted (in the general) what course I usually took in the several Diseases therein mentioned, and what the success was, whether good or bad, and have declared one, as well as the other. [24]

He did, in fact, adhere to this resolve. He writes of the prescribing of "peptick powders" (for the green sickness) and "deoppilatives", of "pectorals" and "gargarisms", but is rarely more specific. There are, however, references to "Aqua asthmatica quercitani" and Quercitan's Tartar Pill" (the latter, at least, intended as an emetic), to "sal volatile oleosum" and "syrup of marshmallows", to "sherry mulled with spearmint" (as an appetite restorative) and to "powder of vipers... for a perverse scabb". [25]

Because of this studied vagueness and imprecision, it is not possible to make any real comparison between the prescriptions in the *History and Memoirs*... and the recipes in the manuscript book. The result is, inevitably, inconclusive.

What period?

If the recipe book did belong to Pierce, from what period of his life is it most likely to date? He graduated B.A. from Lincoln College, Oxford in July of 1642, somewhat over a year after his father's death in April, 1641. He did not take his degrees of M.A. and M.B. until October, 1650, by which time he was 28. By 1651 he was settled in practice near Wookey, for in that year he married Anna, daughter of the tenant of the manor house there, David Trym or Tryme. [26] How did the young physician occupy his time between 1642 and 1650? With his father dead and mother removed from Somerset to Hertfordshire, Robert was having to make his own way in the world during a period of political and military turmoil. It is known that for at least part of this period he was in Bristol — he was certainly there in 1646 [27] — and it may be that, like many before and after him, he lodged with one of the city's apothecaries, as a student rather than as an apprentice, to improve his knowledge of materia medica, and learn about the compounding and dispensing of drugs. This could explain both the carefully compiled collection of recipes, and the rather large quantities of the ingredients involved — more than one would imagine necessary for a provincial physician doing his own dispensing.

Is this recipe book that of Dr Robert Pierce, to whom it has been ascribed these eighty years? I cannot say. As a historian reviewing the evidence, I have to employ the Scottish verdict of "not proven". The truth remains elusive, as does the interpretation of the monogram at the end of tne manuscript, which may — or may not — be "R.P." Whatever the provenance of this volume, it remains a fascinating insight into provincial medical practice in the middle years of the 17th Century, and a happy survival. It is to be hoped that at least some of the readers of this paper will take the opportunity of visiting Wells Cathedral Library and examining it for themselves.

References

1. A number of the entries have been made with the volume inverted. This is one of them, on the *recto* of an unpaginated sheet. The date given for the great fire of London is correct.
2. The *verso* of the flyleaf bears the number '122'. On the *recto* of the second sheet is 'A cement for glasses', and the first recipe, '1. Spirit of Tartar' follows on the *recto* of the third sheet.
3. Following recipe No. 58 'Gun poudre'. These sheets are unpaginated.
4. On the *recto* of an unpaginated sheet. The numbers refer to the recipes, not the pages.
5. After two sheets, entries made with the volume inverted are reached.
6. Nos. 1, 4, and 11.
7. The recipe for the laxative is on the page following the index. Those for the flux, a cough, and the hair-powder are on the inverted pages.
8. The drawing, on an early inverted page, is on the *recto*, with the instructions on the *verso* of the preceeding sheet.
9. No. 3.
10. No. 16.
11. No. 57.
12. Most, as indicated in note 5 above, on inverted sheets.
13. For Claver Morris, see particularly Edmund Hobhouse (ed), *The Diary of a West Country Physician, 1684-1726* (London, 2nd.ed., 1935). For his laboratory, compounding of drugs, etc;. pp. 26-27.
14. There is an entry for Pierce in the *D.N.B.*, XV, pp. 1144-45, but this contains several inaccuracies, e.g. the name of his wife.
15. I am grateful to Dr Roger Rolls for lending me his copy of this work, Robert Pierce, M.D., *The History and Memoirs of the Bath*,(London, for Henry Hammond, Bookseller in Bath, 1713).
16. Pierce, *History & Memoirs*, pp, 79 and 198.
17. I am grateful to Dr Rolls for this reference.
18. I am grateful to the Archivist of Wells Cathedral, Mr L.S. Colchester, for this reference.
19. Pierce, op.cit., p, xix.
20. Ibid., p, xx.
21. Ibid., p, vi. For a reference to the curious and cruel sport of 'Cock-thowing' which flourished in Bristol, see Josiah Tucker, *An Earnest & Affectionate Address to the Common People of England Concerning Their Usual Recreations on Shrove Tuesday* (n.d., but c.1753) pp, 3-4, quoted by George Shelton, *Dean Tucker and Eighteenth Century Economic and Political Thought* (London, 1981) pp, 45-46;
22. Pierce, op.cit., p, 304
23. Ibid., pp, i-ii.
24. Ibid., p, vi.
25. Ibid., pp, 189, 193, 279; 272, 292, 343; 375, 97, 178.
26. For members of the Tryme family, see T.S. Holmes, *The History of the Parish and Manor of Wookey*, (Bristol, n.d.), pp, 17, 55, 67, 69, 108, 118 and 123.
27. Pierce, op.cit., p, 219.

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The Carbolic Smoke Ball

By W.A. JACKSON

My interest in the 'Carbolic Smoke Ball' was first aroused by an advertisement dating from the 1890's which claimed that it would "positively cure" a wide range of ailments including asthma, influenza, snoring, throat deafness and neuralgia. Then on 22nd May 1977, I came across a court case in which a Mrs. Carlill had successfully sued the Carbolic Smoke Ball Company for £100 because she had actually contracted influenza while using their product. Consequently, I was delighted, when visiting an antique market in Bath a few years later, to find a surviving specimen complete with instruction leaflet, in its original box.

The ball is of brown indiarubber, approximately 5 cms. in diameter, and carries the legend "THE CARBOLIC SMOKE BALL. 27 PRINCESS ST. HANOVER SQ. W. PATENTED." This is surmounted by a nozzle of black vulcanite, approximately 1.5 cms. long, across which is stretched a piece of fine gauze, 0.5 cms. below the opening. The user was instructed to "Press the Carbolic Smoke Ball lightly and quickly, and a fine powder resembling smoke will arise. Inhale this smoke or powder vigorously as it arises, from three to five minutes at a time, as shewn in the above illustration, for all the undermentioned ailments. This will cause sneezing, and for a few minutes the patient will feel as if he has a cold. This feeling will soon pass away, and the cure commences. IMPORTANT! When inhaling care should be taken to remove the Smoke Ball between each inhalation, so that the moisture from the breath will not affect the covering through which the fine powder, resembling smoke, arises."

The leaflet goes on to give specific instructions for its use to prevent taking a cold, for catarrh, asthma, bronchitis and cold on the chest, hay fever, neuralgia and headache, throat deafness ("As nearly all cases of deafness are caused by Dry Catarrh, use the Smoke Ball in the same way as in Catarrh, and in addition, put a little hot salt water in the ears night and morning with the end of the finger."), loss of voice, hoarseness and throat trouble, cold in the head, croup, whooping cough, lung troubles, and granulated eye-lids and sore eyes. ("Press the Carbolic Smoke Ball lightly in front of the eyes, three times a day, allowing the powder to settle on the mucous membrane of the eyes.") The box measures 5.5 x 5.5 x 7.5 cms. and bears an illustration of the Smoke Ball.

I have been unable to trace a patent for the Carbolic Smoke Ball in the form in which it was advertised and sold, but think that it probably refers to No. 5430, applied for on the 14th April 1887, and accepted on 17th May 1887. This was communicated from abroad by Andrew J. Spinner of Indianapolis, U.S.A., and taken out by Julius Boult of 323 High Holborn, Middlesex. It consists of "a new method of conveying an antiseptic remedy such as carbolic acid by means of an impalpable powder or dust inhaled through the mouth or nostrils so as to reach the parts which are affected by catarrh or any kindred disease." The carbolic acid is triturated with a fine powder such as slippery elm or licorice (sic) root and placed on a piece of cotton cloth, preferably of double thickness, which is caught up and tied in the manner of a small pouch or bag. This is then held in close proximity to the mouth and nostrils, and struck, releasing a fine powder charged with carbolic acid which is then inhaled. The patient is illustrated by drawings showing the method of use. If these are to be believed, the powder must also have been a remarkable depilatory, figure 1. depicting a gentleman with a luxuriant moustache and beard, who is shown clean-shaven in figure 3.

The *Chemist and Druggist Diary,* 1891 (p. 418) contains a full page advertisement for the Carbolic Smoke Ball which, in addition to an illustration of a young lady demonstrating its use, and a list of conditions which it claimed to cure, included the names of more than fifty distinguished people who used the remedy. These included the Marchioness of Bath, Lady Churchill, Lady Wellesley, The Lady Mayoress, Earl Cadogan, and Henry Irving Esq. The retail price was ten shillings (50p) and they could be obtained by chemists from all Patent Medicine Warehousemen. The wholesale and shipping agents were Wilcox & Co., 239 Oxford Street, London. Another advertisement from the same period[1] omitted the list of users but included more information on the various ailments — e.g. "ASTHMA. Cured in two days." "HAY FEVER. A cure guaranteed." It also stated that it could be refilled, when empty, at a cost of 5/- post free.

There can be little doubt that the Carbolic Smoke Ball was a popular remedy. The owner of Wilcox and Co. was Mr. John Snook, who began his career as an assistant at Corbyn's. He purchased Wilcox and Co. in 1873, and by 1891 was also the owner of Jozeau's in the Haymarket and Jabez Munro's in Regent Street.[2] He claimed to have sold approximately 300 Smoke Balls a month in the summer of 1890, and no less than 1,500 in January 1891. It is probable that this popularity was due in some measure to the attractive young lady whose likeness appeared in the advertisements and handbills of the company. She was employed in the packing room of Ingram's, of Hackney Wick, who were the actual manufacturers, and received a fee of two guineas (£2.10) for "her consent to allow her charms to adorn the handbills of the smoke ball." For those chemists who could not afford to carry a large stock, dummy boxes were available free of charge, from 27 Princes Street, Hanover Sq. London. These also carried a picture of the young miss from the packing room wearing a rather more elaborate dress on this occasion.[3]

Free trial

A handbill (probably a litte later in date) offers free trials of the smoke ball which it describes as a "New American Remedy," at 27 Princes Street. This lists more than sixty users, two notable additions being Miss Ellen Terry and Sir John Banks M.D., K.C.B., Physician to Her Majesty the Queen.

Although their advertising campaign was so successful, it was to lead the company into trouble. On November 13th 1891, during an epidemic of influenza, an advertisement appeared in the *Pall Mall Gazette* offering a reward of £100 to anyone contracting "INFLUENZA, Colds, or any diseases caused by taking cold, AFTER HAVING USED the BALL 3 times daily for two weeks according to the printed directions supplied with each Ball. £1,000 is deposited with the ALLIANCE BANK, REGENT STREET, showing our sincerity in this matter." Unfortunately, a Mrs Carlill did contract influenza after using the Carbolic Smoke Ball as directed for two weeks. On her claiming the £100, the company refused to pay, and Mrs. Carlill took them to court. The company offered four different pleas in their defence, all of which were rejected. Mr. Justice Hawkins said, "...It must be remembered that such advertisements do not appeal so much to the wise and thoughtful as to the credulous and weak portion of the community." A vendor who made a promise "must not be surprised if occasionally he is held to his promise." The decision was upheld by the Court of Appeal, and for many years served as a warning to advertising copywriters.[4] [5] The court case attracted a great deal of publicity, and probably resulted in a decline in sales. On January 7th 1893 it was reported that a new company, Carbolic Smoke Ball Company (Limited), with a capital of £5,500 in £1 shares had been formed "To purchase and carry on the business heretofore carried on under the style of 'The Carbolic Smoke Ball Company.' in London, Paris, New York and Toronto, and to carry on the business of manufacturing and selling the two preparations known as 'The carbolic smoke-ball' and 'Sunilla & c.'"[6] Later the same month we read that "the new company was offering a reward of £200 to any customer contracting one of the twenty specified complaints while using the Smoke Ball, but in view of "..the very high legal advice which they took recently from four of Her Majesty's Judges" were limiting the contract by certain conditions. This action was justified by the statement that only

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three claims had been made against them because of the previous advertisement despite ''many thousands'' of Carbolic Smoke Balls having been sold.[7]

In June 1893 the company again changed hands, this time with a share capital of £35,000, becoming 'Carbolic Smoke-ball Company (1893) (Limited).[8] One of the directors of the new company was the Rev. Canon James Fleming, B.D. Chaplain in Ordinary to the Queen, who said that it was ''..the only remedy that I have come across in more than thirty years use of the voice in public, which stops an incipient cold and prevents it from travelling down into the chest.'' However, criticism from a correspondant of the *Times* who suggested that he should have sufficient time at his disposal to be a useful member of the board of a commercial company, though the appearance of his name as a sponsor was likely to attract incautious investors, caused him to reconsider the matter, and within a few days he had withdrawn from the directorate.[9]

I have found no reference to the Carbolic Smoke Ball after this date, and suspect that the unfavourable result of the trial and subsequent appeal had shaken the public's faith in the product, and that Canon Fleming's resignation from the board of directors may have exacerbated this situation. Nowadays, it is remembered as a piece of legal history, more familiar to lawyers than to pharmacists.

Acknowledgements

The author would like to thank the following people for their assistance:
Miss Doris Jones of the Pharmaceutical Society's Library,
Miss Evelyn Vigeon of The City of Salford Museums and Art Gallery,
Mrs Mary Fancy.

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Drug Jars from the Convent of St. Saviour of Jerusalem

By R.E. DREY

Authors of scholarly manuscripts are often thwarted in their endeavours to see the result of their labours in print, since not unnaturally publishers' decisions whether or not to include a book in their lists are governed by commerical considerations. In Italy, on the other hand, financial support for seemingly unprofitable books is not infrequently forthcoming from regional banks, and consequently transalpine authors are in a more fortunate position than their northern colleagues when they seek a publisher for their manuscripts. One such manuscript, which might well have failed to find a publisher outside Italy due to the specialised nature of the subject, was recently published in Genoa under the sponsorship of the *Cassa di Risparmio di Savona*. The book, *Ceramica e Farmacia di*

Figure 1.
Apothecary jar painted in blue monochrome. Drug name Vngt. Resinum (Unguentum resinum). Inscribed on underside 1791. Giacomo Bosellij. Savona.

San Salvatore a Gerusalemme [1], by Guido Farris and Albert Storme, gives an account of the Convent of St. Saviour in Jerusalem, and describes in detail the ceramic drug jars used in its pharmacy and the pharmacopoeias according to whose directions the various medicaments dispensed in its pharmacy were prepared.

The convent and its pharmacy have a long history. Following a decision by the Chapter General of the Franciscan Order in Italy a group of friars minor established a convent in 1335 on Mount Sion. The primary responsibility of the monks was to protect the holy places in a territory which included not only Palestine but also comprised Jordan, Lebanon, Syria, Lower Egypt, Constantinople, Cyprus and Rhodes; a subsidiary duty was to care for pilgrims journeying in the Holy Land.

In 1559, following their expulsion from their home on Mount Sion on the orders of Sultan Solyman II, the Franciscans purchased a monastery from a community of Georgian monks, which they named Convent of the Holy Saviour. The precincts of the new monastery included a herb garden and a pharmacy which were placed in the care of a friar who had undergone training in the preparation of medicinal substances.

As the need for drugs increased the pharmacy was enlarged and a second friar-pharmacist was appointed. The services of the pharmacy were in great demand; thus in the year 1895 no fewer than 30404 prescriptions were dispensed. Among the specialities of the dispensary was a vulnerary named Jerusalem Balsam (*Balsamum Hierosolemitanum*), which was made from frankincense, myrrh, the roots of selected plants, rose petals, violets and other ingredients. At the beginning of this century other pharmacies in Jerusalem commenced trading, and offered competition to the monastic pharmacy, despite the fact that the latter made no charge to patients for their medicines. The number of prescriptions dispensed fell to 13423 in 1911 and a few years later the pharmacy of St. Saviour ceased its operations. Following the closure of the pharmacy the drug jars and other artistic possessions (a bronze mortar, some maiolica dishes and a Chinese porcelain jar of globular form) were removed to the museum of the Franciscan Monastery of the Flagellation in the Via Dolorosa in Jerusalem, of which Dr. Storme is the present curator.

Figure 2.
Obverse of jar in figure 1.

During its period of activity the Convent of St. Saviour and its pharmacy enjoyed a considerable reputation, not only in the Near East but also in Europe, and received sums of money and gifts in kind from many countries. Distillation apparatus was donated by Venice, metal vessels were given by Germany and Austria, and Spain and Portugal gave herbs, spices and glass vessels. Tin-glazed earthenware drug jars reached the pharmacy from Italy, the chief source being the pottery centre of Savona, to the west of Genoa, which specialised in the production of apothecary's vessels.

Many of the jars display the emblem of the Franciscan Order (argent, a cross of Calvary traversed by two human arms in saltire, one in bend naked, representing the arm of our Saviour, the other in bend sinister habited in the dress of St. Francis, both bearing the stigmata) and the Jerusalem Cross (a cross crosslet cantoned with four crosses) (fig. 1). There is some uncertainty regarding the significance of the Cross of Jerusalem; it is thought that the cross symbolised the custody of the Holy Land which had been entrusted in 1342 by Pope Clement VI to the monks on Mount Sion (*Custodia Francescana di Terra Santa*). Additionally a number of the drug jars from Savona bear the blason of the City of Genoa (fig. 2) or the Kingdom of Savoy, and these jars were presumably gifts to the convent from those states. A number of the ceramic vessels are inscribed on the base with the name of Giacomo Boselli, a leading potter working in Savona in the second half of the 18th century.

Jars from other pottery centres include covered vessels painted in polychrome colours with floral decoration, attributable to Pesaro, two armorial jars from Sicily, a pair of *albarelli* painted in blue monochrome with buildings in a landscape, made in the Abruzzi region, and a series of 110 spouted jars and pots of *albarello* shape, all decorated with formal flowers and representation of the Lion of St. Mark in medallion holding a shield emblazoned with the

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Jerusalem Cross. The last named jars were probably made at the end of the 18th Century at Nove, in the province of Veneto, and may have been a gift from the Republic of Venice to the Convent of St. Saviour. The greater part of the drug vessels are inscribed with the name of the contents in Latin or in Italian.

Ceramica e Farmacia di San Salvatore a Gerusalemme is a notable addition to the corpus of publications dealing with the ceramic drug jars made in Italy for the pharmacies of monasteries and hospitals in Italy and elsewhere, earlier publications describing the drug jars of the *spezieria* of Castelnuovo in Naples (Guido Donatone), the convent of the Capuchins in Bassano, Veneto (Giuseppe Maggioni), the abbey of Pomposa (L.F. Tibertelli de Pisis; Sergio Rocchietta), the *spezieria* and the hospital of Santa Fina in San Gimignano (Gabriele Borghini *et al.*).[2], the hospital Serristori in Figline, Tuscany (Alessandro Conti *et al.*), the hospital of the Santa Casa degli Incurabili in Naples (Guido Donatone), the hospital of Santa Maria di Misericordia in Albenga, Liguria (Costantino Barile), the hospital Maggiore della Carità in Novara (R. Drey) and the hospital of the Holy Spirit on the island of Malta (Roberto Corsano).

I am grateful to Mr. J. V. G. Mallet, Keeper of the Department of Ceramics, Victoria and Albert Museum, for the generous gift of a copy of the volume which is the subject of this note.

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Plymouth Victorian Pharmacy Closes

by E.C. BURROW

Due to war damage and the reconstruction of the City Centre several old Plymouth pharmacies disappeared. None created more comment than the closing of the Victorian pharmacy of C.J. Park which has taken place some forty years later. Mr. C.J. Park PhC. was the son of one of the first Engineering Officers in the Royal Navy. One of a family of eight of whom six brothers served as engineers either with the Royal Navy or the East Indian Steamship Company. Mr. Park, the youngest of the family, born in 1859 was apprenticed to a Mr. Dampney in the Millbay area of Plymouth. He qualified from the "Square" in 1880 when a number of men who had taken no examination were still on the Register. Two years were then spent in Paris with Messrs Gallois. His son still holds his character reference from that company. A period with Wilcox Jozeau in London was followed by a short spell in Torquay.

In an Agreement signed on May 2nd. 1885 Mr. Park purchased the business of the late Mr. Richard Adams Saunders at No. 1 Mutley Plain, Plymouth. This being a good class residential area. Not being able to buy the freehold, he later transferred the business to No. 12 now No. 23 Mutley Plain.

Taking a keen interest in pharmaceutical affairs Mr. Park was an active member of the local branch of the Society and for ten years prior to the 1914-18 war he was a member of the Society's Council.

Mr. Charles Armstrong Park and his sister Muriel were both apprenticed to their father. Mr. Park qualified from Plymouth Technical College in 1927 and his sister got her certificate one year later. They then both worked with their father until Mr. C.J. Park's death in March 1933. Miss Park married during the 1939-45 war and later left Plymouth. Since when Mr. C.A. Park has been the sole owner. Interested in sport Mr. Park was a "7'oclock regular" (a group of people who swam each morning from Plymouth Hoe). During the war his carboys were taken from the windows and stored. An incendiary bomb on the premises was dealt with promptly.

The business continued as a traditional pharmacy until the closing date. Up to about 1920 Soda Water, Seltzogene Water, Lemonade and Gingerade were made on the premises. Throughout the whole period of business the Day Book was headed in latin. The business

Photograph was taken about 1900. It shows Mr. Park Snr. in the doorway and his qualified assistant, an improver, two apprentices and two errand boys.

closed on December 31st, 1983. So much interest was shown in the contents of the pharmacy that the Mannamead Preservation Society was determined to stop the sale of these items. The City Lottery gave a generous donation and guarantors were found to cover the balance. It is hoped to place some of the items on permanent display in the Merchant's House, a restored Elizabethan house already used as a museum.

The collection includes pill and cachet machines, suppository and bougie moulds, carboys, a large assortment of drug bottles with original labels, a number of large maceration bottles and about 100 soda water syphons carrying the Park name. The prescription books date from 1880.

The display project receives the approval and support of the Plymouth Branch of the Society.

Set and produced by Set Fair, 10-12 Gibbon Road, London SE15 2AS. Telephone 01-732-3841.

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Contents

Diary Dates

September 13
British Pharmaceutical Conference History Session. Sir James Watt KBE, MS, FRCS, President Royal Society of Medicine will speak on "Tudor Surgery and the Mary Rose", and Mr Robert Thomson, Keeper of Archeology and Antiquities, Tudor House Museum, Southampton on "Drug jars and medieval trade in Southampton."

November 15
Joint meeting and with the Pharmaceutical Society and the Royal Society of Health. Dr Margaret Rule — "Medical Findings on the Mary Rose".

British Caricature
Dr W.H. Helfand, a member of the Society, presented the Gideon De Laune lecture at the Apothecaries' Hall on April 26. His subject was "Medicine & Pharmacy in British Caricature — The Example of Lord Sidmouth". BSHP members formed a large group of the audience.

Officers
At the Annual General Meeting held in York on April 14 the following were elected to the Society's committee:-
Dr J.G.L. Burnby, Dr W.E. Court, Dr M.P. Earles and Dr J. Lane.

Mr A.H. Briggs and Mr D.C. Harrod were re-elected auditors.
At a Committee meeting on May 10 the following officers were appointed:-
President A.G. Mervyn Madge, FPS
Vice-President J.E. Steane
Treasurer J.C. Bloomfield, OBE, FPS, FBOA, JP
Joint Secretaries Dr W.E. Court, M.Pharm, PhD, FPS, FLS
Arthur Wright, FPS, DBA

Foundation Lecture 1984
As on previous occasions, all tickets for the Foundation Lecture were taken up and a capacity audience heard Dr B.T. Davis present his lecture "Dr William Withering and the Foxglove" when thanking Dr Davis the president, Dr Court, pointed out it was the seventh in the series which had all been sponsored by E.R. Squibb & Sons Ltd.

Spring Conference 1984
The extremely successful conference began with an after dinner talk on the Friday night by Mrs A.L. Oldfield on "York Minster and City". Using an unusual collection of slides and transparencies Mrs Oldfield took her audience on a tour of the City, pointing out some of its unusual features and history.

The recorded history of York begins in AD71 when the Romans established a fortress at the junction of the two rivers (now the Ouse and the Foss). Eboracum, Roman York, became the capital of Lower Britain and there in AD306 Constantine was proclaimed Emperor. The headquarters of the Legions stood on the site of the present Minster; there is the base of a Roman pillar in the crypt and about fifteen years ago when the lantern tower was being restored a length of Roman wall, 4th century paintings, and a complete Roman pillar were found.

The Romans left Britain in the year 410 and after that time little is known of York until the 7th century when, with the baptism of Edwin, King of Northumbria, it became an important centre of Christianity. A little wooden church built for Edwin's baptism was the first York Minster, and later it was rebuilt in stone and enlarged.

With the coming of the Vikings the town, now known as Jorvick, became an international trading centre, but William the Conqueror changed all that. Unable at first to subdue the unruly north he destroyed the city and St. Peter's Minster. Later, however, he sent Thomas of Bayeux to rebuild the Minster and in the 12th century the Archbishop of that period, Roger, rebuilt the east end.

Medieval York was once more a centre of trade and industry. Every trade had its guild, the most important being the Merchant Adventurers. That guild, and a number of others still exist, some dating from medieval times, and others which have been refounded in recent years.

(Continued on p. 12)

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The York Retreat: The Growing Ascendancy Of Medicine, 1796-1914*

By ANNE DIGBY

The small asylum known as the York Retreat had become famous after the publication in 1813 of Samuel Tuke's *Description of the Retreat.* As the first full length account of an asylum and the treatment of mental illness there, it was widely read, and the mild methods of the Retreat's therapy were much imitated by other mental institutions in the early 19th century. In his book Tuke had written that the Retreat's first physician had "perceived how much was to be done by moral, and how little by any known medical means."[1] Indeed, this account of medical treatment at York had given the impression that it was employed sparingly and that moral or psychological therapy was the preferred course of treatment for the mentally ill. Traditionally, therefore, the Retreat has been identified in the public mind not with medical treatment but with moral, especially the use that was made there of a therapeutic environment and occupational therapy. This paper argues that this impression is rather misleading since not only did medicine always have a significant role at York but its function in therapy had become dominant by the second half of the 19th century. The increasing importance of medicine was related both to changes of therapists and to the methods they employed.

The first two superintendents at the Retreat were laymen without medical qualification, who had been chosen for their exacting duties because of their personal character. George Jepson, whose genius with the mentally ill was widely acknowledged, had been chosen because he "would religiously exercise his faculties and affections for the welfare of his charges."[2] At the Quaker-run Retreat the treatment of the insane was seen in those early days of lay therapy as a divine art of healing rather than a scientific medical process. However, Jepson also acted as the apothecary to the institution and made up drugs which the visiting physician had prescribed for patients. His successor, Thomas Allis, continued to act as the apothecary although he admitted on his appointment in 1822 that he possessed "no medical knowledge... possessing as he hopes just common rate abilities"[3].

The growing number of Retreat patients resulted in an appointment of a visiting surgeon in 1824 (in addition to the existing post of visiting physician) and then in 1838 that there was created a new post of resident medical officer, which was filled by John Thurnam. In an era when other asylums were appointing doctors as superintendents, and when insanity was increasingly viewed as an organic disease, the role of the medical man was now seen to be much more central to the Retreat. Yet the hostility that developed between the ageing lay superintendent Thomas Allis, and the ambitious young surgeon, John Thurnam, suggested not just a conflict of personality but a juxtaposition of two eras in the history of mental institutions. Allis, the last lay superintendent, retired prematurely from his post. Thurnam went on to become the first medical superintendent of the Retreat, an appointment made necessary by the Lunatics Act of 1845, which demanded a medical qualification for the post.

Both Dr Thurnam, and Dr John Kitching, (who succeeded him in 1849) were interested in phrenology. Phrenology suggested to its practitioners that insanity could have an organic origin yet have psychological manifestations which needed moral (i.e. psychological) treatment. Conveniently, therefore, it seemed to validate doctors' claims to expertise in moral management and facilitate their supervision of patients' moral as well as medical treatment. Case notes of patients under Thurnam and Kitching suggested the primacy that was given to medical diagnoses and treatment, while moral treatment was trivialised into a means of merely amusing or occupying patients but with no defined therapeutic value.

Dr Robert Baker, who replaced the ailing Kitching in 1874, stated that "I strongly approve of the word hospital instead of asylum."[4] His time at York was notable for a "bricks and mortar humanity" that through a vigorous building programme developed a hospital villa system in the ample grounds of the Retreat. Bedford Pierce, a young and inexperienced doctor who admitted that "it was quite accidental that I took up psychological medicine"[5], reinforced Baker's work in the "medicalisation" of the Retreat after he succeeded him in 1892. Pierce played a notable part in the movement to transform the untrained asylum attendant into the trained psychiatric nurse, having earlier been "struck with the difference between the nurses in general hospitals and asylums."[6]

Associated with this transition from lay to medical therapists came an increasing resort to medical means in the treatment of the Retreat's patients. The average expenditure on medicine per patient more than doubled between the time of Jepson and that of Thurnam, and tripled between that of Jepson and Pierce. Evidence on drug costs and on numbers of patients undergoing medical treatment indicated that within this overall upward trend there was important differences in the readiness to resort to drugs and that these could be related to the preferences of individual doctors.

Dr Thurnam and Dr Baker were notable for their frequent resort to medication. It is interesting that although Retreat patients' reactions to their treatment were usually unknown, two individuals who received chemotherapy from these doctors recorded their protest at it. A male patient — who suffered from remittent mania — was vigorously bled, blistered, sedated and purged by Thurnam. His verdict on doctors was uncompromising:

> Oh! ye erring physicians and philosophers, who think by cupping and cathartics to dispossess the poor demented minds under your charge... Would that your folly may not some day descend upon your own pates[7]

His conclusion was that doctors should "keep your physical nostrums to yourselves!" A later female patient suffering from melancholia — was equally critical of Dr Baker's over-reliance on chemotherapy:

> The general remedy seemed to be the nightly opiate. I have frequently seen 5 or 6 of these bottles in the hand of an attendant, and have good reasons for believing they were largely dispensed... If, during the day any patient had felt a little better and when bedtime came

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wished to try to sleep without the draught she had no liberty to do so. The least apparent reluctance was roughly reproved as "insubordination."[8]

She disliked the chloral hydrate that was prescribed for her because of its side effects but remonstrated in vain. And her reference to "insubordination" gave a revealing insight into an increasingly authoritarian institution, where by this time medicine was certainly in the ascendant.

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Much fuller documentation is to be found in the author's forthcoming volume, *Madness, Morality and Medicine. A Study of the York Retreat, 1796-1914,* to be published by Cambridge University Press in 1985.

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Life in 19th Century York*

By Dr M.C. BARNET

As a community physician for North Yorkshire I have not been concerned with the clinical treatment of individual patients. Instead I have had to look at the problems and needs for the health and life of the whole community; to see how these are being met and measuring improvements.

It is impossible to review the whole history of life in 19th century York. I have therefore looked at certain aspects at different periods in the century, considering 19th century York in relation to the World Health Organisation's requirements for any community under such headings as:- food, housing, water, sanitation, health services and education.

The First Third of the 19th Century

Although York claimed to be the second city of the country in status, it was certainly not so in real importance. It gave the impression of a pre-industrial town, a market centre with only a few manufactories. It had some ecclesiastical and legal importance. Its local government was restrictive and archaic even by the standards of the day. It looked back to the period when it had been the social centre for the North.

The population however was different to other towns of its size (15,000 in 1801) for it had above the national average of professional people and those of independent means who chose to live in the city; and, not surprisingly, there was a very large population of domestic servants to attend them.

Housing

The population lived mainly within the city walls; professional people and prosperous tradesmen had not yet moved from the city centre. The majority of the population lived in decaying old properties which were often sub-let. Overcrowding was already being noticed in some courts and closes.

A few streets of "Houses for the Labouring Classes" were built by speculative builders in Albion Street, Bootham Row, Long Close Lane.

Amongst better-class housing a guide-book to York refers to the Deanery: "in one of the rooms there is a bath which posseses the singular quality that whenever there is a fire in the kitchen a warm bath can be obtained in a few minutes — a strange and singular effect"

Water

The water works supplied water direct from the Ouse through wooden or metal pipes to 3,000 houses where it was stored in lead cisterns. Poorer houses depended on a tap in the yard or nearby. In Long Close Lane (recently erected) there was one tap to every 14 houses. Others went direct to the river with a bucket. Water carriers were still employed.

Drainage and Sanitation

The system was medieval or non-existant in some streets open drains received all sorts of refuse. Some better-class houses had a water closet emptying into a cesspool. Night soil was removed infrequently at a cost of 6d a load and taken to official sites and was later sold to farmers at a handsome profit.

The River Foss was stagnant a literal sewer into which 90 public and private drains emptied.

Food

The working people fed largely on bread — about 14lb per person, a week, according to the Economic History Review. In 1800 they used only 1½lb tea per person per year and 6lb by 1900. They ate 15½lb sugar each at the beginning of the century but 85lb at the end.

Medical Services

The three 'orders' of medical men — physicians, surgeons and apothecaries — had different standards of training, or none at all. *York Dispensary* provided care for the sick-poor who had to get a ticket of entitlement from a subscriber to the charity. About 2,000 a year were treated. *York County Hospital* received patients from the country as well as the city so it was difficult to know how many were treated — probably less than 100 York people. There was a very limited range of treatment and patients could only stay for one month. Registers show that they were admitted for rheumatism, ulcers, fevers, dislocations, fractures etc. Diagnosis, before the introduction of scientific aids, depended on the account which the patient gave of his symptoms. Before the introduction of anaesthesia only

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about 5% of patients had operations.

Minute Books show a pre-occupation with domestic affairs — the servants (who included the nurses) the hospital cow and how much bread was used for poultices.

Wards had wooden beds, probably with bed curtains, a red blanket and a sheet which was supposed to be washed monthly. The patient had to bring his own nightcap and 3 nightshirts, also a mug, plate and spoon. A fire, the light of flickering candles or dips, and no dangerous ventilation! provided a cosy atmosphere. Rough plain food all provided conditions which were probably as good as, or better than in the patient's own home.

'Social Services'
There were a number of charities providing help in kind or in money, or places in almshouses for a number of people.

Care of the poor was the responsibility of the Parish. A number had joined together in the later 18th Century to establish a workhouse where there were an average of 90 inmates at a time. The master was allowed 6d a week per person. (And 6d fine for each pauper who got out.)

Education
There were two old grammar schools, several parish and charity schools. The Church of England established two National Schools and the Non-Conformist opened a British and Foreign School Society. In 1819 it is estimated that there were places for 1,156 children.

Middle of the 19th Century
This was perhaps one of the most stressful periods in York's long history. We know a lot about it because more records and facts are available. In 1837 Civil Registration of births, marriages and deaths began. Equally valuable are the Census Returns and the Enumerative Notebooks.

The period opened ominously for York did not escape the terrible cholera epidemic of 1832. In four months there were 450 cases with 185 deaths.

In 1842 a description of York drawn up by a group of York gentlemen including the Lord Mayor, the Recorder. They formed the York Sanitary Committee and had prepared their report for "The Commission of the State of Large Towns" which an alarmed government had set up following the cholera epidemic. This report describes the filthy water supply, lack of drains, the pigstyes, cowsheds, stables and noxious trades in close proximity to appalling housing.

A similar report a few years later by Dr James Smith, Inspector of the General Board of Health in London was critical of the continuence of such conditions in York (1851).

Housing
In 1832 the population was 26,000 and the overcrowding was increasing. New housing was doing little to help the situation. Also, the City Council had no control over housing standards and builders could not be compelled to put in sewers or to drain the streets.

Interiors of houses tended to be dark. The window tax was not repealed until 1851. Tallow candles (which "smelt badly") and the more expensive beeswax candles were both taxed until 1831.

By the 1850s paraffin lamps were being used. Gas was becoming popular amongst those who could afford it.

Food
Food tended to be simple as many had no ovens. Bread from the bakers shop was indeed the staff of life and was often almost the total diet, supplimented by tiny quantities of butter, cheese, bacon and tea. It was often contaminated and adulterated or rotting. In 1850 *"The Lancet"* carried out a survey which showed that flour often contained chalk, alum or sawdust. Half the milk and all the butter contained added water. Nux Vomica (strychnine) was commonly added to beer to give it a "kick", or even to cause hallucinations.

Tea was being drunk increasingly after 1830.

Parliamentary papers noted that meat was eaten only once or twice a week by unskilled labourers and the poor rarely ate it.

The first meat inspector was appointed in York in 1865 at a time when cattle pest was widespread in the city. All slaughtering was done on the butcher's premises. Apart from this there was no supervision of food control or hygiene.

Education
The Manchester Statistical Society presented a paper to the British Association in 1837 showing that 67% of children aged 5-14 years attended schools in York but the quality of instruction was "indifferent".

There were many attempts to provide some adult education in the city aimed at the intelligent artisans. The York Mechanics Institute provided excellent lectures and classes however they were rather above the intellectual abilities of these people, and it attracted largely a middle-class support.

The Quakers were largely instrumental in setting up Adult Schools to deal with adult illiteracy, together with Bible readings, and they became closely associated with the Temperance Movement.

Population
Alan Armstrong's "Stability and change in an English County Town" gives a remarkably clear picture of York at mid-century based on the Census Returns of 1841 and 1851.

Contrary to what might be expected only a quarter of the adult population in 1851 were born in York. All the rest were immigrants.

These were made up of people of independent means, largely from the North of England, professional people, and the artisans and engineers from Durham and Tyneside who came to develop the railways. They came usually as unmarried men, married York girls and settled in the Holgate area. They were the artisan elite who could earn as much as 24-30 shillings a week.

Then there were young men and women from the surrounding rural areas where there had been a series of bad harvests and cottages were difficult to get. The men became unskilled labourers etc. and the girls domestic servants.

Health Services
County Hospital
The old hospital was replaced by a new building in 1851 but the extra beds increased the running costs and wards had to be closed and nurses dismissed. Money was available but the 12 trustees ignored the governors' pleas for some to be released and for the rest to be invested more profitably. There was continuing frustration and undoubtedly the

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hospital became less efficient. A crisis was reached when the Royal College of Physicians and Surgeons refused to recognise it as any longer suitable for the training of medical students and this meant the end of the small but excellent York Medical School

The Medical Men

Before 1858 the profession was in a state of chaos with many licensing bodies but no common standard of training and competance. There was no medical register so the public did not know who was properly qualified. The 1858 Act created the General Medical Council which amongst its duties was to oversee medical education and the licensing of doctors.

York had above average numbers of doctors (1-424 of the population) and they must have had a lean time. To augument their incomes many undertook salaried work as medical officers to the gaol, or to the Poor Law or the Militia. Later Club Practice was a help (6d per week per patient).

The Last Third of the 19th Century

Medical Services

The sick-poor could be treated as 'patients' in the voluntary hospital, but if they were admitted to the infirmary then they were classified as 'Paupers'. Yet the only real difference was their type of illness. The County Hospital would not accept chronic or incurable cases which were the responsibilty of the workhouse infirmary.

At the Census of 1861 there were 11,000 patients in voluntary hospitals in England and Wales, but 50,000 in infirmaries. This proportion seems to have applied in York.

The York Dispensary treated about 11,000 cases a year.

Upper-Middle Class Patients

The family coped with sickness at home. Nursing aids were part of every home's equipment — the washbowl, the commode, steam-kettle, inhalers, feeding cup.

If an operation was necessary the surgeon would operate on a well-scrubbed table. The poor could receive surgical treatment from some surgeon who was honorary surgeon to the hospital and gave his service freely.

There were large numbers of people of very modest means and gradually they began to enter hospitals for treatment. Many hospital govenors and guardians of the workhouses resented what was described as "An Abuse of the Hospitals". Therefore many hospitals began to make a charge to those who could afford it. Also many little nursing homes were opened to provide a service.

There were many types of unorthodox medicine, homeopathy, phrenology etc.

Thompson the American extolled the virtues of herbalism. One of his assistants "Dr" Coffin came to this country and his followers "The Coffinites" became strong in the North of England like many other forms of Fringe Medicine they were aggressive and intolerant, preaching the right of all people to health — by using certain vegetable products — particularly Lobelia. They also preached radical ideas and were associated with the Chartists.

Undoubtedly they appealed to people who could not afford a doctor and were accustomed to treat themselves.

Patent Medicines were increasingly used after 1870, partly due to uncontrolled advertising and to increased literacy in the population. There were many well-known names: James Holloway for example. Beecham helped immensely by his splendid slogan of "Worth a Guinea a Box"; and Jesse Boot replying with a promise of Health For All who bought his Patent Lobelia Pill which cured both asthma and indigestion.

Opium was freely available without restriction in its sale for self-medication as well as on a doctor's prescription in the form of laudenum, paregoric elixir, Dr Godfrey's Cordial etc. It was used for aches and pains, to soothe the practious infant. Working men and women used it to relieve exhaustion. Whilst better class people took it for "kicks".

In 1873 York appointed, the first M.O.H. He was Dr North who had been a student at the old school of medicine. He campaigned ceaselessly to improve conditions. His annual reports, discussions with the city council, his papers in the York Medical Society are revealing.

The majority of the population of 43,000 lived in decaying old houses, or in streets of badly planned houses obviously destined to be slums of the future. 1,500 houses were back-to-back often against a stable or privy. In 1859 1,300 homes had no water. York was essentially still a "midden-town".

Rowntree

In 1899 Rowntree produced his great survey of York "Poverty, A Study of Town Life". It gave a picture of life using descriptions and statistics. He investigated 11,000 families and showed that 28% of the population were living in poverty. This was an unpleasant shock there was not a well-fed and comfortable working class but a mass of debilitated people living at subsistance level. A third of the children were under-nourished and five inches shorter than similar children from better-class homes.

People were ashamed of taking Poor Relief but there was no shame in accepting charity. In 1900 York charities paid out £21,000 compaired with £7,000 out-relief from the Poor Law. These were inadequate methods of social welfare for they failed to concern themselves with the *causes* of poverty.

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Yorkshire, Cradle of Medical Friends*

By M. Phillips

Yorkshire, Cradle of medical Friends — When I chose this title, I had in mind a brief mention of all the eminent medical men who came of Quaker stock and had their origins, upbringing or early training in Yorkshire, and all the large pharmaceutical concerns which originated in Yorkshire and whose founders were Quakers or came of Quaker stock. However, a preliminary glance at the size of the area concerned, the potentially available material, and the proposed length of the paper, quickly convinced me that such a survey would result in, as Mr Milligan, the Friends' head librarian expressed it, "just a list of names". I decided, therefore, to concentrate on one or two of those whose early influences appeared to have made most impact on both professions, from the early days of the Society of Friends and throughout the following two centuries.

The Quakers, or Children of Light, or, as they finally came to be known, the Religious Society of Friends, first became known in Leicestershire, where George Fox founded the sect in 1643, but it quickly spread throughout the Midlands and the North, and especially into country districts and non-corporate towns.

Despite much opposition and cruel persecution, the Quakers mostly flourished and became exceedingly prosperous, mainly because of their industriousness and the reputation they established for honesty and fair dealing; but perhaps also because of their plain dress and way of living, their close-knit communities, and the disgrace to the whole community if one of their number failed or became bankrupt. Because of their refusal to take oaths, as the Test Act required, they were barred from English universities and corporate towns, so the training of Quaker apothecaries and doctors was usually by means of apprenticeship to apothecaries in country districts and small towns, followed, in the case of medical men, by Scottish university degrees from Edinburgh or St. Andrews, or degrees from Leyden, in Holland. They and their children were educated at Quaker schools and sent to fellow Quakers for professional training, and there was much inter-marriage, so they formed almost their own community within the professions.

It was from this closely-integrated background that many of the foremost medical men of the late 17th and early 18th centuries came, and there were few of these who were not connected, by ties of blood or friendship or marriage, with two early Yorkshire apothecaries, Benjamin Bartlett of Bradford and Abraham Sutcliffe of Settle.

Benjamin Bartlett was born in Bradford on April 9, 1678, the son of Joshua Bartlett and Sarah Hird. Joshua Bartlett was a bookseller and stationer, and he and his parents suffered many persecutions for their Quaker faith. Benjamin continued his father's business as a bookseller alongside his profession as an apothecary. He was described by H.R. Hodgson as "exemplarily diligent in a profession which to one less devout would have furnished frequent plausible excuses". John Lettsom, too, said of him that his "amiable manners and exemplary conduct had conferred on him the character of a good man".

*Abstract from a paper given at the Spring Conference, York, April 1984

Bartlett's business prospered, and he became one of the foremost citizens of Bradford, where he owned a number of properties. He was one of the Friends who formed a company in 1744 to organise a water supply for Bradford. In 1705, despite his staunch adherence to the Society of Friends, a pew was allocated to him in Bradford parish church. He travelled extensively as a minister of the Society, visiting Meetings in the south and west of England. Yet, despite all these activities, Benjamin did not neglect his business as an apothecary. Gilbert Thompson, in his "Life of Dr John Fothergill," wrote of Bartlett that "his house might be called the Seminary of Ingenious Physicians. How happy to obtain such a master, when to imitate him was to be the gentleman in sentiment and manner, to be generous, good and virtuous".

Benjamin was married twice. His first wife, Bridget, died in 1704. In 1713, he married Elizabeth, daughter of Thomas Green of Liversedge. They had two children, Benjamin and Elizabeth. Benjamin, born in 1714, became an apothecary and carried on his fathers business for a while, but he was better known for his interest in antiquities, coins, Roman remains and monasteries. He married Martha Heathcote and their son, Benjamin Newton Bartlett, was born in 1745. His sister, Elizabeth, born in 1718, married Henry Gurney, and when Benjamin Newton died unmarried, the Bartletts's considerable fortune passed to the Gurneys of Norwich. Among the elder Benjamin's apprentices was the famous Quaker doctor John Fothergill. Fothergill was born at Semerdale, known as "Quaker Valley", in 1712. At the age of sixteen he went to Bradford to be apprenticed to Benjamin Bartlett for 7 years. The indenture states that "John Fothergill hath of his own free will bound himself as apprentice for 7 years." that he "his master well and faithfully shall serve; his secrets he shall keep; taverns he shall not haunt; at dice, cards, tables, bowls or any other unlawful games he shall not play."

On his side, Benjamin promises to teach him "the art, trade, mystery or occupation of an apothecary" and to give him "sufficient and enough meat, drink, washing and lodging. Fothergill's father had to provide consideration money of £50, plus all apparels and other necessaries whatsoever". After 6 years compounding medicines and visiting patients, Fothergill decided to go to Edinburgh to further his medical education. He graduated from there in 1736, then moved to London and became a physician at St. Thomas' Hospital. After two years hospital training he set up in practice as a physician in London, and soon had one of the largest and most successful practices in that city. He was a pioneer in the use of simple drugs, carefully prepared and of good quality, instead of the complex, frequently revolting and often useless, concoctions in general use at that time; reflecting perhaps his training with Benjamin Bartlett.

Forthergill wrote many medical works, and is famous for his studies of "malignant sore throat." He had a notable botanical garden at Upton, Essex, into which he introduced plants and trees from all over the world, as well as a large collection of shells and fossils.

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True to his Quaker tradition, he was industrious, kind and benevolent, and a great philanthropist. He was a friend of Benjamin Franklin, and with him sought to avoid war between England and the American colonies. He helped John Howard in reforming prisons; with John Hustler, he promoted the making of canals; and he took part in many measures advocating governmental reforms. He joined with Thomas Corbyn and other Quakers in a scheme for the sale of food at low prices for the benefit of London's poor.

Fothergill never married, and in 1754 his sister Ann Fothergill left Yorkshire to keep house for him. He made many friends, and it was said that when he died in 1780, "some 70 coaches attended the funeral".

One of Fothergill's friends from his Edinburgh days was Dr Gilbert Thompson. Thompson was a distant relative of Fothergill's. His grandfather founded the well-known Quaker school at Penketh, and Thompson taught there, before studying medicine. He graduated from Edinburgh in 1758, and came to London to practise as a physician, but was not very successful because he was, according to a report "too diffident to win the confidence of his patients". He suddenly gave up medicine and took a post, first as a schoolmaster, and then as a dispensing assistant under the Bevans at Plough Court. He re-entered medical practice in 1768. He was a founder member of Lettsom's Medical Society of London. He published, in 1782, a biography of Dr John Fothergill.

Another Quaker friend of Fothergill's was Dr Thomas Dimsdale. He came of an old Quaker family of Essex. Dimsdale was a pioneer in inoculation against small-pox and journeyed to Russia to inoculate the Empress Catherine II. He also successfully inoculated many other people in St Petersburgh, and for his services to the Empress he was created a Baron of the Empire. He afterwards gave up medical practice in favour of banking. He was disowned by the Society of Friends in 1780 for "marrying — out", but on his death in 1800, aged 88, he was buried in the Friends' burial ground at Bishop's Stortford.

One of Fothergill's Edinburgh friends was Robert Willan. His family lived at Marthwaite, near Sedbergh, and had been Quakers from the earliest records of the Society of Friends. His father was a prosperous hosier, acting between the Dent knitters and the customers. He held Meetings at his house in Dent. Robert graduated from Edinburgh and was in practice in Scarborough about 1745, but in 1748 he moved to Philadelphia as a teacher of Latin and Greek. He made what Fothergill called a "precipitate return", and established a successful medical practice in Sedbergh. His son, who was born at Sedbergh in 1757, qualified as M.D. at Edinburgh in 1780, and became an eminent dermatologist.

Let us now turn to the doctor's great-nephew, Samuel Fothergill. Samuel took his M.D. at Glasgow in 1802, followed by his L.R.C.P. in 1805. He became physician to the Western Dispensary in London. He made a special study of trigeminal neuralgia, an was the first to locate its seat in the 5th cranial nerve. The disease became known as Fothergill's disease.

Yet another of Fothergill's friends was Timothy Maud, a surgeon in Bradford, who became the first superintendent of the York Retreat. His son, William Maud, born in 1765, was a surgeon and apothecary who established a business in Tyrell Street which afterwards became Maud and Wilson and then Harrison and Parkinson. He was an active philanthropist who gave free medical advice to the poor, and was the first doctor in Bradford to adopt vaccination. His partner, Thomas Wilson was also a well-known doctor.

Returning to Benjamin Bartlett, we find another of his apprentices was William Hillary. The Hillary family lived at Hillary Hall, in the Wensleydale village of Burtesett, near to the Fothergill home at Carr End. William was born in 1697. After his apprenticeship with Benjamin Bartlett, he took his medical degree at Leyden, then became a physician in Ripon. In 1734 he moved to Bath, but since he found this situation "not the most agreeable nor the most pleasant" he moved in 1747 to Barbados. He returned to London in 1758, living quietly in retirement until his death in 1765. Hillary was one of the first physicians to correlate illnesses with climatic conditions. He was, we are told, a careful and systematic observer of the weather and its effect on prevalent diseases. He also wrote one of the earliest books to deal specifically with tropical disease.

Another of Bartlett's pupils was William Hird. He was born at Woodhouse, Rawden, Staffordshire, and was a nephew of John Fothergill. He became a physician to the newly-formed Infirmary at Leeds. Hird died in 1782, aged 55.

Moving now from Bradford to Settle, we come to Abraham Sutcliffe, a Quaker apothecary there. Sutcliffe was born in York in 1721. He was not only an apothecary but also an accomplished Latin scholar. He was entirely self-taught. Up to the age of sixteen, he was a weaver, but finding the work too hard he went as an errand boy for a relation named Ecroyd, who was a surgeon in Kendal. There, his work consisted of cleaning out the shop and delivering the medicines. By borrowing books, he picked up enough Latin to be able to read a prescription, and then learned to compound the medicines. Eventually he was permitted to visit patients on behalf of his employer. He also saved a little money, and in view of his industry and perseverance, his employer allowed him to go to Edinburgh in the winter to attend some of the classes. He became proficient in medical science and also a Latin scholar. Lettsom, who was one of his apprentices, wrote that "so attached was he to Latin, that he would not permit me to read an English book in his presence and often would instruct me in his favourite language."

Sutcliffe finally started to practise in Settle, where he became "one of the townsmen of considerable standing". He was a trustee of the Keighley and Kendal Turnpike, and a promoter of the new Workhouse opened in 1759. He never had less than two or three apprentices. Among them was John Coakely Lettsom, protégée and friend of Dr John Fothergill. When Abraham retired, Lettsom procured for him a medical degree at Aberdeen. Lettsom urged him to come to London, but the old man, who wanted to continue practising as a physician, thought he had been so long away that none of his former teachers would be still alive to vouch for him. He did go there for a brief visit in 1786, then he retired to Sheffield, where he died in 1798. In 1791, Lettsom wrote to him "I have felt a pride in owning thee as my master, and by thy principles I have felt how much I have been indebted to thee."

When Sutcliffe retired, his son William took over the house and business and took many apprentices who became

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doctors. He was succeeded by a Dr Burrows. The last medical occupant of the house was a Dr Simpson, in the 1860s.

Sucliffe's famous apprentice, John Coakely Lettsom, was born in the West Indies the son of Quaker parents, who sent him to England when he was six years old, to escape the sickness and disease then prevalent in those islands. His father died, and one of his appointed guardians was Samuel Fothergill, a younger brother of Dr John Fothergill. Samuel advised him to enter the Friends school at Penketh, and then, in 1761 placed him as an apprentice with Abraham Sutcliffe. Lettsome was indentured for 5 years, and wrote of his apprenticeship, "I went to Settle, an apprentice, a fatherless lad, and my guardian, when he parted from me impressed upon my mind his last words, 'Please thy master, and above all, please thy mistress, and if thou turnedst out well I will recommend thee to my brother, the doctor'".

Lettsom obviously did turn out well, because he went up to London with an introduction to John Fothergill, who became his patron. He took a one-year course at St. Thomas's Hospital, then returned to Tortola, in the West Indies, to take possession of his family property. This consisted chiefly of negro slaves, and Lettsom, true to his Quaker principles, freed them all, leaving himself almost penniless. He became a physician in Tortola, where he was so successful that in five months he acquired almost £2,000. After giving half to his mother, he returned with the rest to England, and on Fothergill's advice took further training at Edinburgh and Leyden where he graduated. He returned to London, where he met and married Ann Miers, daughter of a wealthy Quaker tin-plate merchant. Lettsom took his L.R.C.P. in 1770, and in the same year was elected a Fellow of the Society of Antiquaries. He built up a large and thriving practice, at one time the largest in London, and yet found time to pursue medical and scientific studies, to publish many medical papers, and to take part in charitable and philanthropic work. He was the leading founder, in 1773, of the Medical Society of London, which included among its members many eminent Quaker doctors.

Lettsom was a Fellow of the Royal Society and a friend of the apothecary and botanist Willam Curtis who had been brought up a Friend, and helped him financially in the issuing of his work "Flora Londinensia". He was President of many useful charitable and humane societies, and founded in 1793 the General Seabathing Infirmary at Margate, which was intended for the benefit of the poor children of London, and afterwards became the Royal Seabathing Hospital. He died in 1815, and was buried in the Friends' ground at Bunhill Row, in the presence of a few Friends, including William Allen, and of a concourse of his poorer patients.

Another Lettsom, Dr William Coakely Lettsom, a cousin of Dr John, was also apprenticed to Abraham Sutcliffe. He then took the Certificate of the Corporation of Surgeons, and became an assistant surgeon to the East India Company.

Another of Sutcliffe's apprentices, Thomas Hodgkin, was the Quaker doctor who was said to have introduced the legible writing of prescriptions, so that patients could order their medicines wherever they went, and the bad practise that a chemist was attached to each doctor, who was entitled to a commission of 25% came to an end.

Abraham Sutcliffe's nephew, Jonathan Binns, also became his apprentice. He later studied medicine in Edinburgh, and became a friend of the celebrated Dr Knowles of Birmingham. Jonathan Binns was the son of Sutcliffe's sister Elizabeth. He became a doctor of medicine in Liverpool, with a large and lucrative practise, which he gave up in 1795 to became Superintendent of Ackworth school.

Binns' friend, Dr Knowles, was a native of Yorkshire, and may have been apprenticed to Abraham Sutcliffe, though he settled first as an apothecary in Birmingham. He afterwards studied medicine at Leyden, then commenced as a physician in London, where, according to J.J. Abrahams, he "became a serious rival to Fothergill among the Quakers, especially among those who did not care for Fothergills stiff-bodied precision, or Lettsom's loquacious, rapid and bustling methods of diagnosis."

Dr Knowles died in 1786, of a fever caught from one of his patients, though he was renowned for the exercise of successful skill in that disorder.

As I mentioned at the begining of this talk, for reasons of time I have concentrated on only two main streams of Quaker doctors originating in Yorkshire. There were many more. Dr John Ness Blakey, born in 1784, was apprenticed to Fothergill's friend William Maud and became his partner. Thomas Lister was a pupil and for a time a partner of Timothy Maud. Joshua Walker was a Quaker doctor of Bradford, as was his son, another Joshua Walker.

As we come nearer to modern times we find the Quaker doctors less trammelled by the restrictions which hampered their earlier progress, rising to positions of considerable eminence. Typical of these was Sir Jonathan Hutchinson. Jonathan Hutchinson was born at Selby. In 1845 he was apprenticed to Caleb Williams of York. In 1846, he entered the York School of Medicine. In 1850, he went to London and became a clinical assistant at the Liverpool Street Chest Hospital. He married Jane Pyment West, daughter of William West, chemist, of Leeds, founder of the pharmaceutical company of Reynolds & Branson. In 1859, he became assistant surgeon to the London Hospital, and 25 years later the Hutchinson Triennial Essay Prize was founded there. Hutchinson was a Fellow of the Royal Society, and held many eminent positions in medicine and surgery. He sat on at least two Royal Commissions and received honorary degrees from six universities. He was knighted in 1908. In 1866 he bought a country house in Haslemere, Surrey, where he died in 1913.

There were doubtless many more doctors and apothecaries' apprentices who became doctors, in this, formerly the largest county in England. Their stories may be told at a later date. But we cannot leave Yorkshire now without mentioning one distinguished Quaker who did not practise medicine, but stayed in his chemist's shop, and eventually became the founder of a great pharmaceutical manufacturing concern.

William West was born at Wandsworth in Surrey, the eldest son of staunch Quaker parents. William became a chemist and moved to Leeds, where he was for many years a lecturer in chemistry to medical students. In 1816 he opened a chemist's shop in Briggate, Leeds. William, like his fellow Quakers, was a man of much scientific attainment. He was one of the founders of the British Association for the

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Advancement of Science, and was expert in forensic medicine. Often in his professional life he was called upon to give evidence in cases of poisoning, and this caused him much anxiety in case, believing as he did in the inviolable sacredness of all human life, his testimony should lead to the conviction of the prisoner. He is believed to have been the first expert to take a microscope into court to demonstrate to a jury the composition of human blood, and its use as evidence in a case of murder.

William West took an active interest in the philanthropic societies in Leeds, and was particularly concerned for mental health and welfare. He was a pacifist, and in 1849 attended the conference in Paris which had as its object the promotion of universal peace. It was said of William that he "tried by quiet and patient example and in private opportunities to correct wrong doing when it came to his notice." He married in 1817, Jane Bracher of Wincanton, but none of his eight children followed him into the business. His daughter Jane married Jonathan Hutchinson.

In 1841, William was joined in the business by Thomas Harvey. Thomas was born in Barnsley in 1812, and educated at Ackworth School and at York. He was apprenticed to David Doncaster of Sheffield, and later to Thomas Southall of Birmingham. Harvey was a Quaker Minister and travelled widely in the service of the Society. He retired from business at the age of 55, "in order to devote himself more fully to religious and philanthropic work. He died in 1884, aged 72.

In 1854, Harvey had taken into partnership another Quaker, Richard Reynolds, son of a chemist and druggist of Banbury, Oxfordshire. Richard was for 9 years a member of the Council of the Pharmaceutical Society, and was in turn Secretary and President of the British Pharmaceutical Conference. His son, Richard Freshfield Reynolds also became a partner in the firm and the company was then known as Harvey & Reynolds, until 1890, when Mr F W Branson became a partner and the firm became Reynolds & Branson.

This paper refers to only a few of the eminent medical and pharmaceutical figures who had their origins in Yorkshire, but the ones we have discussed were all staunch members of the Society of Friends, and bear witness to the validity of Yorkshire's claim to be a true cradle of medical Friends.

I wish to acknowledge the help given by Edward Milligan and staff at the library of Friends House.

Pharmacy and the Cocoa bean*

By J.G.L. BURNBY

The cocoa bean and its preparations have played an important role in the life of the indigenous civilizations.

The beans were not used only for a drink but also as a currency in the great markets of the Maya and Aztec empires. Barter was the order of the day, and money as an exchange medium of fixed value did not exist, but something had to be found which could be used to balance unequal exchanges, particularly in small transactions, something which was not too valuable but was nevertheless universally wanted, namely the cocoa bean.[1]

The earliest record of chocolate drinking in this country is to be found in an advertisement in the *Public Advertiser* of June 1657, which informed the public that "in Bishopsgate Street, in Queen's Head Alley, at a Frenchman's house, is an excellent West India drink called Chocolate to be sold, where you may have it ready at any time, and also unmade at reasonable rates." During the Restoration and into the early years of the 18th Century the drinking of chocolate increased rapidly in popularity, largely, Knapp suggests as a result of the European habit of adding sugar, the absence of maize flour and the reduction in hot spices.[2] Pepys' diary for November 24, 1664 says, "To a coffee house to drink jocolatte, very good" which is more than he said about tea. Sillermann after his visit to London wrote, "Ozinda's chocolate house was full of aristocratic consumers. The habit was deemed a token of elegant and fashionable taste... while ... learned physicians extolled its medicinal virtues." He said that it sold at 10s. to 15s. a pound, but probably over-estimated the price.[3] Dr Stubbe in his *The Indian Nectar*... recommended his readers to buy their chocolate from a man called Mortimer in East Smithfield who sold "the best kind at 6s. 8d. a pound and commoner sorts at about half that price."[4] Twinnings in 1715 priced their chocolate at from 2s.6d to 3s.9d.; they had a number of varieties such as "Sugar Chocolate", "Chocolate with Vinelloes", "Allnutt" and "Vinell Allnutt".

Twinings' earliest ledgers show that very few grocers had then taken up the new fashionable drinks of tea, coffee and chocolate, the main retailers being coffee-houses, mercers and milliners, goldsmiths and apothecaries. Tom Twining was both retailer and wholesaler, and amongst his apothecary customers were Mr Canning of Norfolk Street, Strand, Mr Sherwood in Mark Lane, (i.e. James Sherrard), Mr Harden in Hampstead, John Allen in Devizes, Thomas Breton in Northampton and Frances Howgrave of Stamford.[5]

Like tea, it was urged that chocolate had medicinal virtues. No apothecary did more to publicise the use of chocolate than John Houghton FRS 1645-1705. In his *A collection for Improvement of Husbandry and Trade* (first started March 1692), he turned more and more to the field of advertising. Soon advertisements such as the following were to be seen, "I sell Chocolate made of the best Nuts, without Spice or Perfume, and with Vinellos and Spice, and I know them to be a great helper of bad Stomachs and Restorative to weak People." In the end he was so successful in the promotion of the new drinks that he explained in the copy of September 1703 why he had to stop publication, "Since (besides my Trade of Apothecary wherein I have always been and still am, diligent) I have fallen to the Selling of Coffee, Tea and Chocolate in some considerable degree and I cannot without great inconvenience to my private Affairs... spare Time to carry on this History."[6]

A near contemporary, the physician Sir Hans Sloane (1660-1753) was the originator of a mixture of chocolate and milk, and went to some trouble to promote its use. His

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recipe was at first solely manufactured by William White, who announced that it was "Greatly recommended by several eminent Physicians especially those of Sir Hans Sloane's Acquaintance for its Lightness on the Stomach and its great Use in all Consumptive Cases."[7]

Before 1828 the beverage was made from grated cakes of chocolate prepared from the ground bean mixed with sugar. These cakes were naturally rich in cocoa butter as approximately half the bean consists of the fat, consequently although the Royal Navy has always consumed it in this condition, lesser mortals found it a little heavy.[8] An illustration in *Arts and Sciences* published in 1768 shows small scale chocolate manufacture of the period. One man is roasting the beans in an iron kettle over a furnace, stirring the beans to prevent burning; the next man sifts the roasted kernels from their husks, then the nibs as they are now called are pounded in an iron mortar. Finally another man is shown grinding the nibs on a hard, smooth stone with an iron roller, the grinding being performed over a chafing dish over burning charcoal which kept the paste in a semi liquid condition, so assisting the grinding.

This is the type of little factory which must have been set up by the Quaker Joseph Fry (1728-1789) apothecary in Bristol. He was the eldest child of a clothier John Fry of Sutton Benger, Wiltshire, who was apprenticed to a well known and well respected apothecary and surgeon in Basingstoke, Henry Portsmouth, whose daughter Anna he was eventually to marry. The exact date he arrived in Bristol is not known but the Town Council or Tolzoy gave him the right to practice as an apothecary on payment of a £15 fine in 1753. He is known to have been making chocolate in Small Street by 1756; three years later he moved to a house opposite Chequer Lane in Narrow Wine Street, and announced in the *Bristol Journal* that he was selling and making chocolate as usual. It must have been about this time that Fry decided to move into the business in a bigger way.

There was already at least one other chocolate manufacturer in Bristol, another Quaker and an apothecary as well, Walter Churchman. It is said that he began to grind cocoa beans in Bristol Castle Mill on the River Frome near Newgate as early as 1728 using a water engine, and that in the following year he was granted a patent for his process. Certainly he was advertising in August issue of *Farley's Bristol Newspaper* in 1731 that His Majesty had been pleased to grant him "Letters Patent for the sole use of an Engine by him invented for the expeditious, fine and clean making of Chocolate to greater perfection than by any other method in use..." After his death the business was carried out by his son Charles, a solicitor. He died in May 1761 and the *Bristol Journal* announced the sale of "the Castle Mills... with all the buildings adjoining, late the estate of Mr Charles Churchman... And also the Chocolate Mills and works there, which being a Secret cannot be exposed to view." Despite this disadvantage Joseph Fry entered into negotiations and the following November was able to tell the readers of the *Bristol Journal* that "Churchman's Patent Chocolate is now made by Joseph Fry and John Vaughan junior, the said Churchman's executor, the present and sole proprietors of the famous Water Engine at the Castle Mills."[9]

Although Joseph Fry had many other irons in the fire such as the short-lived manufacture of procelain in association with Richard Champion and William Cookworthy, printing and type-founding, he is today remembered as a chocolate maker, and indeed is referred to as such in the contemporary Quaker records. The type foundry and printing works, which had been moved to London, fell to the lot of the two elder sons, Henry and Edmund, and the chocolate works to his third son Joseph Storrs Fry.

It is well known that Terrys of York, claimed to date from 1767, was founded by an apothecary, Joseph Terry. His first shop was in Walmgate but then he moved to the more fashionable Bootham; he began as a maker of sweets, chocolates being a later product. The great expansion of the firm was due to his eldest son Joseph, later Sir, Joseph Terry.

The founder of the firm of Rowntrees can by no means be claimed for pharmacy. Mary Tuke (born 1696) like Joseph Fry, Walter Churchman and later Cadburys was a Quaker, determined when she was 29 to go into business on her own account as a grocer. Her father a blacksmith, had been a freeman of York so she had no problem gaining her Freedom of the city, but to trade legally she had to be either a member of the York Merchant Adventurers' Company or be licensed by them, and this she could not achieve. She defied the Company for two years who made many dire threats until 1732 she won her right to trade, provided she paid the fellowship £10 and did not take apprentices, — and even the latter prohibition was eventually lifted. She left her business to her nephew William Tuke but it was by no means a flourishing one, and remained so until his son, Henry, became a partner in 1785. It is thought to have been Henry who introduced the manufacture of chocolate. It was a fortunate decision for the firm went from strength to strengh.

Not to follow the history of the firm in great detail it is sufficient to mention that the tea business was hived off and that Henry Isaac Rowntree took over the cocoa manufactury in 1862, and was soon joined by his brother Joseph. The main product of this time was Tuke's Rock Cocoa, the best quality of which sold wholesale at only 9d. per pound. It should be remembered that until the early 19th century any reference to chocolate was in relation to the beverage and not to "eating chocolate". The earliest known reference to the sweetmeat is to be found in *Butler's Medical Directory* for 1826 which terms J.S. Fry's Chocolate Lozenges "a pleasant and nutritious food when travelling." After the Dutch chocolate-makers, Van Houten's, discovered in 1828 a method of pressing out part of the butter, of the beans and so obtaining a lighter, more appetising and easily assimilated preparation, the excess Ol. Theobrom. so obtained was used in the manufature of chocolate sweets. Rowntree's introduced chocolate drops and 1d. and ½d chocolate balls in 1882.

As Rowntree's grew it absorbed and merged with other firms. The most important from our point of view were John Mackintosh & Sons in 1969 and Chocolat-Menier two years later. Mackintosh's started in 1890 with John and his Violet in their pastry shop in Halifax where they introduced their famous toffee, the first of the modern toffees which are a blend of the brittle English type and the soft American caramel. They first started to manufacture chocolate in 1912. In 1932 they acquired A.J. Caley & Son Ltd. of Norwich.

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Albert Jarman Caley (1828-1895) in June 1847 became the registered apprentice of a Mr Knowles of Maidstone, chemist and druggist. he passed the minor exam. of the Pharmaceutical Society in January 1850 and is to be found on the 1856 list of members as the holder of certificate No.77. He was then in business at Windsor where he held a warrant of appointment to Queen Victoria.[10] Notwithstanding this success he sold up in 1863 and moved to Norwich where he joined a pharmaceutical chemist of some renown. As Octavius Corder related in his presidential address to the Nottingham Conference of 1893, he became after passing the classical exam. the registered apprentice of Mr Knott of Exeter from 1842 to 1846. He passed the minor and major exams. in the summer of 1850 and was elected a member of the Society in the spring of 1852 when working at Tyne Street, North Shields.[11] Caley and Corder worked in partnership for eleven years during which time Caley began to manufacture mineral waters in the back shop, as so many pharmacists have done. By 1874 he decided to leave pharmacy in order to develop his interests in ginger beer and soda water. Progress was swift but he was faced with the problem of what to do with his workmen in wintertime, and very sensibly turned to the production of cocoa, a cold weather drink. Later he began to manufacture chocolates even bringing over from France a chocolateur who had served the French royal family. Caley & Son had a number of successes including their famous "Marching Chocolate" of the Great War.[12]

The merging of Menier's S.A. of Paris in 1971 takes us into the pharmaceutical by-ways of another country. Chocolate drinking was undoubtedly known in France soon after it came into vogue in Spain but it did not gain the same popularity until the time of the marriage of the Infanta of Spain and Austria, Marie-Therese, to Louis XIV in 1660. A French historian wrote of her that she had only two passions — the king and chocolate. An officer attached to the queen, David Chaillou, was given letters patent by the king in November 1659 (confirmed in February 1666) that he had the monopoly of selling "une certaine composition qui se nomme chocolat, soit en liqueur, pastilles ou en bôite" for 29 years. On the expiration of the privilege it seems that for the next sixty years chocolate was prepared on a small scale by confectioners, grocers and pharmacists paritcularly in the towns of the Midi.[13] The oldest factory or chocolaterie in France was that of Lombart which was founded in Paris in 1760. But whatever the origin of the chocolate, the price was high and the quality usually poor. It came to the notice of that great French pharmacist Augustin Paramentier (1737-1813) who should be remembered for so much more than his work on the potato; amongst his 165 papers is one on the manufacture of chocolate which was published in 1786.

In Bourgueil, a town celebrated for its wines, in 1765 was born to a "Vigneron" a son who was given the resounding names of Jean-Antoine-Brutus Menier. He was sent to the Prytanée military academy and in 1812 came to the notice of the chief pharmacist there. As a result Menier was chosen to be a preparateur or laboratory assistant. Letters were often received in the laboratory from Baron Larry, chief surgeon to the French armies, in which he frequently and forcibly expressed his displeasure at the poor quality medicines supplied to the troops, the greater part of the powders being adulterated.

After the fall of Napoleon in 1815 the young men training to bear arms realised they must instead enter "civvy street", and amongst them was the 20-year-old Menier who decided to take up the merchandising of pharmaceutical products. Up till then it had been usual for shopkeepers to merely dip their hands into the barrel holding the required goods and roughly wrap them up in a piece of paper, but the young Menier thought this altogether too crude. He began to sell his pharmaceutical powders in little sachets of paper or material which were printed with his name and signature which amounted to a trade-mark and a guarantee of quality. The new idea quickly caught on and was soon accepted.

For grinding his powders he had only an old horse-mill, but about 1825 a man called Antiq, an engineer who had done some work for him, told him of a water operated corn mill on the banks of the Marne at Noisiel near Paris. The new mill was so efficient that there was power to spare, whereupon the enterprising Antiq suggested that it should be used for the preparation of chocolate. This was done and proved very successful for Menier and his twelve workmen.

At this point Jean-Antoine-Brutus, now over 40, ran into trouble; he was told that he could not manufacture and sell medicaments without his diploma in pharmacy. Nothing daunted he decided to pass the necessary exams., which caused quite a stir in the academic world of the Latin Quarter. The professors at the school of pharmacy between 1840 and 1844 were Baron Thénard, Orfila, Becquerel and Balard, all of whom afterwards became firm friends of the middle-aged student.

Émile-Gaston, Menier's son entered the business in 1846 at the age of 20. Up till then both branches of the factory, the pharmaceutical and the chocolate-making, had been simultaneously expanded but soon Emile decided to separate them when an opportunity arose. In due course the pharmaceuticals were removed to Saint-Denis, and in 1867 were sold to La pharmacie Centrale, whilst the chocolate section stayed at Noisiel to climb to even greater importance. Contact with the scientific world was not however lost at the chocolate factory, many of the finest scientists of the second half of the 19th century, working with the firms fine equipment were to be found there; men such as Berthelot who acted as consultant chemist for several years, and who worked there on the synthesis of alcohol.[14]

As has been shown, all these men, apothecaries, wholesale druggists, pharmacists, ultimately left pharmacy in favour of confectionary, but there is a smaller group of whom this is not true. Besides the very high percentage of cocoa butter to be found in the kernel or nib, there is also between 1% and 3% of the purine theobromine.

Caffeine was isolated from coffee as far back as 1820 and from tea seven years later. Whiffens of Battersea, a firm with roots in the early days of manufacturing chemists and of the Pharmaceutical Society, were producing caffeine from tea-dust in 1888 and by 1900 pure theobromine during the purification of the caffeine.[15] Since when, theobromine has been obtained in considerable quantities as a by-product of chocolate manufacture and can be easily converted into caffeine should it be necessary to supplement supplies. As late as the 1950s Whiffens claimed that these two natural sources, tea leaves and cocoa beans, could compete satisfactorily with the production of caffeine by fully synthetic methods.

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It would seem that there is no moral to this tale of the association between pharmacy and the cocoa bean, beyond the fact that if there is a demand somebody will satisfy it, and if you are a multi-disciplinary man, such as a pharmacist, then there is a good chance that you will be that person.

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2. A.W. Knapp, *Chocolate and Cocoa*, London, Chapman & Hall, 1920, p.10
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4. "Historicus" (Richard Cadbury) London, Sampson Low, Marston, 1982, p.40.
5. S.H.Twining *The House of Twining, 1706-1956*, London, R. Twining & Co., 1956, p.19.
6. D. O'Rourke, 'John Hougton', *Pharm. Hist.*, April 1979, vol.9, p.3.
7. *Pharm. Hist.*, April 1982, vol.12, p.8.
8. Knapp, op.cit., p.76 In 1837 the cacao cleared for home consumption was 4 or 5,000 tons, more than half of which was consumed by the Navy.

8a. Inland Revenue Apprenticeship recorder, I.R./1/17. August 1743 Henry Portsmouth of Basingstoke, Surgeon etc., took as apprentice Joseph son of John Fry of Sutton, Wilts., for 7 year premium £100.

9. Both the raw materials and chocolate itself became a source of inland revenue and in 1776 Joseph Fry, maker of Chocolate, addressed the Lords Commissioners of the Treasury on the subject. he wrote "Chocolate... pays 2s. 3d. per pound, besides about 10s. per cwt. on the Cocoa nuts from which it is made." For much of the material on the Bristol chocolate-makers I am indebted to Mr. F.H. Rawlings of Bristol
10. L.G. Matthews, *Pharmacists in the Wider World.*
11. For many years Octavius Corder was an examiner in botany for the Society.
12. When a young recruit of 18 was staggering up to the front with an 80 lb. pack he would undoubtedly find "instant calories" a help.
13. M. Menier, 'Memoire', *Contrefacons par imitation du Chocolat-Menier*, 1872, p.2.
14. An interview given by Gaston Menier to Andre Arnyvelde.
15. Edward Herring of Herrings Brothers, 40, Aldersgate Street, founder members of the Pharmaceutical Society, obtained a patent for a new method of producing Quin. Sulph, in 1853, and the following year went into production with Thomas Whiffen in Southwark. Herring's interest was acquired four years later by the elderly Jacob Hulle who had been in pharmaceutical manufacturing since 1807. Soon after, the small factory was moved to the bottom of Whiffen's garden in Battersea, and ten years later (1868) on Hulle's retirement, Thomas Whiffen gained the whole interest.

Spring Conference 1984 (Continued from p.1)

There were priories and friaries in medieval York, the great Benedictine Abbey of St. Mary's and also the Hospital of St. Leonard whose brethren did a lot of good work among the sick, both in the city and in the gaols, unlike the monks of St. Mary's who kept to their own area. The present Minster was built at this time between the years 1220 and 1472; it is the largest Gothic church in England.

Despite difficulties of distance, Sovereigns journied to medieval York and even held Parliaments there. Richard II conferred upon the chief magistrate the title of *Lord* Mayor and today, though several cities have their Lord Mayor, those of London and York are still the only two in England permitted to use the prefix "The Right Honourable". It was the medieval people who gave York much of the priceless stained glass in the Minster and the churches, and who built the defensive wall, with its massive bars, which still almost completely surround the city.

Georgian York was the social capital of the north and most county families had a town house in the city. They attended Race Meetings, saw famous actors and actresses at the Theatre Royal and danced their nights away in the Assembly Rooms. With Queen Victoria came the era of railways and when York became the chief northern railway centre its industrial future was assured.

With the widening of streets and the building of modern shops some of the city's historic features have, of necessity, been lost, but the finest will always be preserved. And, while industry and commerce play a large part in the York's prosperity, nevertheless it is the historic past which gives it its character and which attracts visitors in their thousands every year — its old streets, walls and buildings; its ruined castle and abbey, its fine museums. And above all, the magnificent cathedral which the world knows as York whole Minster.

The Conference dinner, on Saturday night, was sponsored by the Sandoz organisation and was followed by a talk by Mr Semmens, assistant director, British Railway museum.

Wedgwood Exhibition

Members interested in ceramics will enjoy an exhibition "Wedgwood in-London" being held at Wedgwood House, 32-34 Wigmore Street, London W1H 0HU to celebrate the 225th anniversary of the founding of the company. In addition to ceramics (including a pestle and a mortar) from the Wedgwood museum collection at Barlaston, there is a special display relating to Josiah Wedgwood's election to the fellowship of the Royal Society. Wedgwood developed a "— thermometer for measuring the higher degrees of heat, from a red heat up to the strongest that vessels of clay can support." One item on display is a draft of Wedgwood's paper for the Royal Society, another is a plaster plaque of Joseph Priestley. The exhibition is open Mon-Fridays 9am-5.15pm until August 31.

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Diary Dates

November 15
Joint meeting with the Pharmaceutical Society and Royal Society of Health. Dr Margaret Rule — ''Medical Findings on the Mary Rose''.

April 19-21 1985
Provisional dates for the BSHP Spring Conference. Probable venue — Oxford.

An Appeal
From time to time The Society is asked about places of ''pharmaceutical interest'' and museums exhibiting pharmaceutical antiques. In order to bring the records up to date, members and readers are asked to submit details of any local historical pharmacies, museums etc so that a comprehensive list can be compiled. It would be helpful if a brief note is given describing each entry in the list together with the appropriate name and address.

Whilst initially the emphasis is on pharmacies and museum collections, details of industrial and other pharmaceutical historical activities may also be included.

It is recognised that not every member has the energy or opportunity to devote time to a serious piece of research, but this project is one to which all can contribute please do it now and send the details to: The Secretary (Ref. Records) B5HP 36 York Place, Edinburgh. EH1 3HU.

OBITUARY
Robert Gibson Todd FPS. On August 24, a founder member of BSHP who was made an honorary member of the society in March 1980. A regular attender at evening meetings and conferences of the society and an indefatigable supporter of its aims and objects even though he could not be encouraged to act as a committee member.

Those who knew him were indeed privileged, for he was a remarkable man, a distinguished editor of ''Martindale'', erudite and knowledgeable on many aspects of pharmacy and a scholar of diverse interests. The Pharmaceutical Society's library and historical collection benefitted from his caring and precise attention. The exhibitions he so carefully prepared delighted many.

BSHP members will miss his great reservoir of knowledge which he so willingly shared, and regret that we shall have to forgo the anticipated pleasure of this paper he was to give at the society's 1985 foundation lecture. He had been working on a 17th century prescription and day book and was about to prepare a history of the apothecary concerned, in readiness for the lecture.

At the history session of the British Pharmaceutical Conference, London 1973 he presented a fascinating paper ''Bloomsbury Square and Bloomsbury''. In 1977 he presented a lecture on the ''Treasures of the Society'' to the joint BSHP and PSGB meeting. The paper ''Medicines of the Past and their Hazards'' which he was to have given at this year's British Pharmaceutical Conference, was presented posthumously.

Officers of the society and committee members will miss his sound guidance and companionship — all members mourn his passing.

Congratulations
To Professor David L. Cowen, USA, an ethusiastic honorary member of BSHP, who was awarded an honorary degree of Doctor of Letters at the 50th Anniversary Convocation of University College, the first University College faculty or staff member to receive an honorary degree from the University. Professor Cowen is internationally known for his articles and books and especially his contributions concerning the Edinburgh Pharmacopoeia.

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York Bellfounders and their Mortars*

By D. A. Hutton

Six hundred and seventysix years ago, the earliest known, dated English bellmetal mortar was cast by Brother Williams Towthorpe, for the Infirmary of St. Mary's Abbey, York.

The mortar weighs almost 35 Kg. It has two rope style handles, and two lines of inscription separated by a band of quatrefoil decorations enclosing symbols of the evangelists. The inscriptions read:

(upper) MORTARIV : SCI : IOHIS : EWANGEL. DE.IFIRMARIA. BE. MARIA. EBOR.
(lower) FR. WILLS. DE TOVTHORP. ME. FECIT. A.D. M.CCC.VIII.

Medieval mortars are very rare. They wore out, cracked, were used as a convenient source of scrap metal, or were lost in the fires which periodically devastated English towns. This York mortar is perhaps the finest of the handful of English medieval mortars which survive.

Nothing is known of its whereabouts 200 years after the Dissolution of the Abbey. It was reported to be in the hands of the Fairfax family for some time, before passing to Mr. Smith, a bellfounder of York. It was then sold to a Mr. A. Addington, whose son, a perfumer or confectioner in the Minster Yard, had it in 1734.

By 1789, it had moved 14 miles south of York, and was in the possession of an apothecary in Selby. All traces were lost after the apothecary's death, until 1811, when the mortar was discovered in a large collection of scrap metal, by Mr. Rudder, a bellfounder of Birmingham. The story goes, that, unwilling to cast such a beautiful relic into the furnace, he put it aside year after year, and finally presented it to an antiquarian friend, Mr. Blount, a Birmingham surgeon. After his death, it was sold by auction in 1835 for a considerable price. The purchaser, Mr. Kenrick, presented it to the York Philosophical Society. It may still be seen in their museum, now the Yorkshire Museum, in the grounds of the ruined St. Mary's Abbey.[1]

Bellmetal or 'brazen' mortars are mentioned in York wills and inventories from the 14th century onwards. Constantine Del Damme, citizen and apothecary of York, placed his brasen mortar with iron pestle at the head of his extensive list of pharmaceutical equipment, in his will dated 1398.[2] Many household inventories include one or two brasen mortars amongst the kitchen effects. Indeed, most small mortars must have been made for domestic use. Together with pots, pans, skillets, ewers, buckets and basins, they were made by the bellfounders, who sometimes decorated them with the same ornaments, lettering and numerals they used on their bells. Occasionally, the bellfounder's trade mark indicated the range of his products. The foundry mark of John Copgrave, a 14th century York bellfounder, shows a crozier, bell, two-handled tripod pot and a pestle and mortar.[3]

Shortly after the St. Mary's Abbey was cast, a York bellfounder Richard Tunnoc, presented a window to the Minster. Tunnoc, who had a house in Stonegate in 1311-12,

Mortar cast for the Infirmary of St. Mary's Abbey, York, in 1308. (Courtesy of the Yorkshire Museum).

was a prominent citizen of York, being a bailiff of the City in 1320, and Member of Parliament in 1327. He died in 1330, and was buried in the Minster. He was a goldsmith as well, but preferred to be remembered as a bellfounder, for his window in the North Aisle of the Minster nave is decorated with gold and silver bells, and shows scenes illustrating the craft of bellfounding.

The window consists of three 20ft. high lights, with three quatrefoils in the head tracery. The two side lights have a border of bells, but the middle light has a border of monkey musicians. The three upper panels in the window refer to St. William of York crossing the Ouse Bridge. The three lower panels show the bellfounder at work. The left panel shows Tunnoc shaping the core, or mould of the bell, with a long crook, whilst an assistant turns the mould. The right panel shows the founder directing the flow of metal from the furnace to the bell mould, whilst two assistants work the bellows heating the furnace. The centre panel shows Tunnoc presenting his window to St. William.[4] The window is said to be one of the most instructive illustrations of medieval bellfounding in existence.

York was the centre of bellfounding for the whole of the North of medieval England. Though limited to the south by the activities of the Nottingham and Leicester founders, the York craftsmen made bells for Northern churches as far as the Scottish border. The names of nearly 50 bellfounders who operated in York between the 13th and 18th centuries have survived. Many of these are names only, found in the lists of freemen, in parish records which note money paid for metal and work in bellcasting. The earliest reliable name for a York bellfounder, is Robert le Belyetere, c. 1280.[5] Between then and 1400, there were 24 freemen working as bellfounders in York, another 17 in the next 100 years, and 15 after 1600.

York was well able to support these craftsmen. Before the reformation and suppression of the monastries, it is estimated there were 84 religious houses in the city, including the Minster, 41 parish churches, 17 chapels, 16 hospitals, 9 abbeys and monastries. Bells played an important part in marking the hours of religious services and

* Abstract from a paper given at the Spring Conference, York April 1984.

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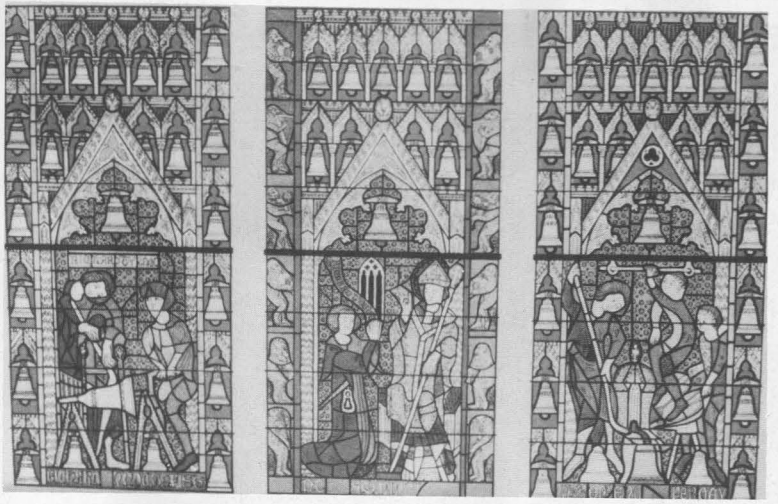

Part of the Bellfounders' Window, York Minster. Drawings from H.T. Ellacombe. *Bells of the Church*, Exeter 1872, pl.8.

14th. c. Foundary mark of John Copgrave of York.

the hours of commerce. The Civic Ordinances of 1303 decreed that "No fish is to be sold after Vespers is struck at the church of St. Michael at the bridge over the Ouse until Prime is struck at the great church of St. Peter on the next day."[6] The bells were often replaced. They wore out, fell down or broke when their bell towers collapsed. The Minster's Great Bell fell down in 1359; the accounts for its replacement in 1371, by John de Stafforde, still exist. St. Mary's Abbey spire was struck by lightning in 1375, and set on fire, ruining both tower and bells.

When not engaged on ecclesiastic commissions, the bellfounder used the same techniques and material to produce pots and pans for the domestic market. The medieval population of York is thought to have been between 12 and 14,000, enough to support a healthy and at times wealthy trade.

Foundries are known to have existed in at least seven places: within the Minster precincts, in the Bedern, at Layerthorpe, on Toft Green, and in Jubbergate, Stonegate and Lendal.

The earliest of these seems to be the Minster site. Extensive remains of medieval bellfounding were found in the North Aisle of the Minster during excavations carried out between 1968-71.[7] Originally, this foundry would have been outside the wall of the Norman nave, which was extended between 1291-1343. Not all the bells were cast so close to their bell tower. In1469, one of the Great Bells for the Minster was cast in the foundry at Layerthorpe, outside the city's north-east walls, across the Foss river.[8]

In the mid 1970's, York Archeological Trust excavated a site to the rear of Goodramgate, on tenements adjacent to the Bedern, the medieval college of the Vicars Choral. They found traces of a bronze foundry, with many broken moulds of cauldrons and other utensils, and a kiln area. They dated the site as being used from the late 13th to the late 15th century. The whole area was semi-industrial in character, leaseholders being blacksmiths, brewers, etc. this industrial usage continued into the 18th century, for Thomas Kaey, Brasscaster, held the leases of two houses off Goodramgate in 1758.[9]

It is possible that the mortars for both apothecary and householder in medieval York were cast in this area.

The other known foundry sites date from the 17th or 18th centuries. Toft Green was run by the Smiths and Williams Cuerdon between 1635-1731. Jubbergate foundry was operated very successfully by the Sellers from 1635 to 1764. This family provided two Sheriffs of York in the first half of the 18th century. The last bellfounders in York, George Dalton and his sons, founded in Stonegate, but George Dalton moved to Lendal in 1764, where he had 'commodious foundry and good water carriage.' His sons Robert and Henry continued the business for a while,[10] but bellfounding in York had ceased by the beginning of the 19th century.

Only one of these later foundries is associated with mortar making. The 17th century was the heyday of English mortar makers, and the Smiths with Williams Cuerdon produced some elegant examples. A splendid specimen from their Toft Green Foundry may be seen in York Castle Museum, above the door of the Apothecary's shop in Kirkgate.

There were four Smiths: Abraham, who took his freedom as a brazier in 1635, James, Samuel, and Samuel's son, also called Samuel.

Abraham, James and the elder Samuel cast bells in partnership with Williams Cuerdon between 1650 and 1662.

Apothecary's shop, Kirkgate, Castle Museum, York.

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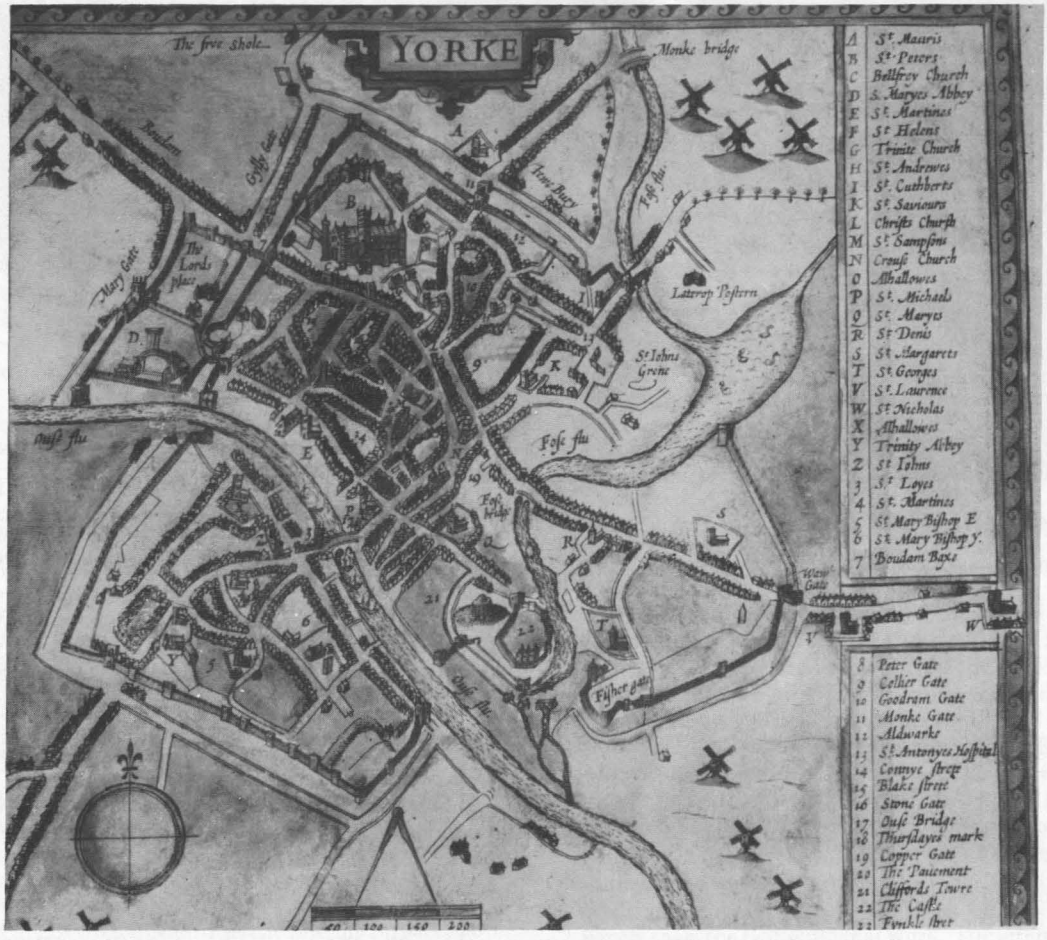

John Speede, Map of York, 1616.

They identified their work with their initials and two shields. The first shield bears a cross separating the initials W.C. and two bells, and the second shield bears a chevron and three bells, impaled with three ewers.[11] Two mortars, bearing these foundry stamps, have been recorded.

After 1662, Williams Cuerdon moved to Doncaster, and Samuel Smith the elder continued the Toft Green foundry alone, until joined by his son at the end of the century. From 1662 on, he used a new foundry stamp,

SS
Ebor

in a cartouche. Mortars with this stamp may still be seen in antique shops and salerooms, as well as museums. The Smiths made at least three sizes, using the same shape and the same decorative rim and waist bands of delicately curling tendrils with flowers and foliage. Larger versions of the bands display bells on either side of the cartouche.

The elder Smith was born about 1642, and was casting his own bells by 1662. In 1670, he married Rachel Gyles,[12] the sister of Henry Gyles, the noted glass painter. Both families lived in Micklegate, close to the Toft Green Foundry. Henry Gyles was a member of the artistic and antiquarian circle which centred on the antiquarian Ralph Thoresby, of Leeds, and it was in this milieu that Samuel Smith's son grew up.

Ralph Thoresby often visited Gyles, to view his exquisitely painted windows, and to discuss the latest Roman finds. It was at Gyles' house, No. 68, Micklegate, that he met young Samuel. Of one visit, he recorded in his diary,

> *'June 5th, 1702. Evening sat up too late with a parcel of artists I had on my hands. Mr. Gyles the famousest painter of glass in the world, & his nephew Mr. Smith the bellfounder (from whom I received the ringing or gingling spur, & that most remarkable with a neck 6½" long) Mr. Carpenter the statuary & Mr. Etty the painter.... Sat up full late with them.'*[13]

The younger Samuel corresponded frequently with Thoresby, sending him news of Roman remains and items for his collection, such as the spur, an enamelled and gilt copper plate from a shrine of Thomas a'Beckett and wax impressions of seals. Samuel's taste for antiquities continued throughout his successful career as bellfounder and civic dignitary (he was Sheriff of York in 1723-4) for in later life, he was said to be "very skilful and curious" in coins, a rich man with some learning.[14] It was at Samuel Smith's house in Micklegate that Francis Drake, the York historian, saw the great St. Mary's Abbey mortar of 1308.[15] Samuel Smith the younger was just the man to recognise the historic and artistic value of this medieval mortar, and play a part in preserving it from the fiery furnace.

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Mortar by Sammuel Smith, York.

Whitechapel mortar 'Roger Warde apothecary in York 1684.'

The Smith's foundry on Toft Green did not enjoy a monopoly in supplying mortars to the citizens of York. Competition for important commissions came from outside the city. The massive mortar inscribed 'ROGER WARDE APOTHECARY IN YORK 1684' with its waist band of fleur-de-lys and cinquefoil, is typical of those mortars ascribed to the Whitechapel bellfoundry in London. Roger Warde took his freedom as an apothecary of York in 1683, the same year that Samuel Smith the elder was Chamberlain.[16] Warde married Priscilla Robinson in 1684, [17] and his mortar may well celebrate that occasion. Warde must have known Smith, and the attractive mortars from the Toft Green Foundry. The Smith mortars, however, have no owner's name, or date, only a small trade mark discreetly placed in the waist band decoration. Perhaps Roger Warde thought them too small and anonymous. Just starting in his career, maybe he wished to advertise his pride in being an apothecary, and symbolised his wealth and importance in this very large London mortar.

The Smith bellfoundry closed in 1731, after the death of Samuel Smith the younger. Having no children, he left it to his brother James, who disposed of the business. The history of bellmetal mortar making in York had come to an end.

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* I am indebted to Peter Gibson FSA. Secretary of the York Glazier's Trust, for slides of the actual window which were used to illustrate the original talk in York.

A pharmacy among the "Six"

The Savory Moore pharmacy was featured in the Bury St. Edmunds programme in the B.B.C. television series "Another Six English Towns". The careful renovation of the building was praised by Alec Clifton-Taylor who in the programme pointed out the wood carvings and mentioned that the timber framed 15th century building was probably prefabricated in a carpenter's yard and that each joint was marked with an axe to facilitate later site construction. Examples of the marks at the top of a staircase were shown.

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William Elmhirst 1721-17730*

Surgeon-Apothecary — and Medical Frontiersman

By E. M. Sigsworth

Accounts of the evolution of the practice of the apothecary during the 18th and early 19th century are complex, given the changing nature of their status and the different rates of growth in a rapidly expanding society. A rapidly increasing population, particularly after the 1740's contained a rising number of people able to afford some form of medical treatment. A growing urban and industrial content posed special medical problems which were either new or increasing in amount. A further complication which has so far dominated accounts of the origins of the medical profession, were the evolving status differentiations between physicians, surgeons and apothecaries and between the latter and druggists.[1] Partly for this reason, names and titles can be misleading. As Kett observed, "in 1780, a person who called himself an apothecary or a surgeon-apothecary was not doing the same things, in many instances, as his namesake in 1730".[2] Nor, one might add, might any two apothecaries at the same point in time.

It is, therefore, hazardous to generalise from the study of one surgeon-apothercary's account book — that of William Elmhirst between 1776 and his death in 1783. In some respects he was, according to generally received wisdom which is however likely to be heavily revised,[3] untypical. Thus, he inherited extensive and anciently established estates on his father's death in 1746 whereas, according to the Parrys, following Newman... "the apothecary by and large came from the stratum of society from which a fundamentally shopkeeping order could have come, the shopkeepers and other lower middle-class groups, combined with the higher stratum of what might be called the depressed middle classes, the younger sons, the sons of curates or of village schoolteachers". Those from "good" families would be rare.[4] Similarly, his income from his practice of £250 or so yearly, plus £50 from farming, places him high in the economic order when, according to Massie's estimates of 1760 the wealthiest farmers received about £150 and lawyers and innkeepers £100 yearly.[5] How exceptional, furthermore, was his attendance on landed families like the Edmonds of Worsborough Hall? We are usually told, for example, that "the wealthiest families of a neighbourhood would always engage a *physician* if available"[6] or ... "Physicians managed to exercise a virtual monopoly of the market for the medical care of the rich".[7] In an admittedly statistically imprecise age, a contemporary wrote that the ratio of patients between physician and apothecary was 1:20 in London, but more likely 1:40 elsewhere. The apothecary then was, if these views are correct, the medical attendant of the masses, including prisoners and the poor in their workhouses.

Elmhirst certainly attended the paupers of Worsborough and five neighbouring parishes. The status of his other patients is infrequently recorded — a Barnsley linen band — loom weaver, a wire drawer, a painter, cutter, mason and three tailors indicate that of some. In the mixed farming, mining and industrial area around Barnsley there must have been a growing number of craftsmen and their families beginning to feel the benevolent effects of economic growth and able to resort to an apothecary for treatment.

How typical Elmhirst's practice was medically could only be assessed in the light of much more evidence from contemporary sources. His most common prescription was for purgatives — effective no doubt but subject to competition from druggists and folk medicine. Other popular treatments were for scurvy, asthma and the prescription of assorted cordials, plaster, clysters, salves, ointments and on occasion a Pox lotion. Surgically, over the period covered by the account book, he performed 110 vien openings (only 2 on women) otherwise he treated abcesses, strains, dislocations and occasionally fractures. The infrequency of resort to surgery of any kind is noticeable and the entire absence of midwifery cases. Only once was major surgery practised — the amputation of a pauper's leg. He carried out vetinerary treatments on animals about as often as surgery on human beings. Although he was not doing so widely; according to the ledger (27 cases in five years) Elmhirst was practising inoculation against smallpox in the late 1760's and early 1770's — at a period when it was becoming widespread as a result of the activities of the Suttons and their imitators. He was thus, if P.E. Razzell's much disputed claims are correct for the reduction of smallpox mortality and thereby general mortality, playing a part, albeit small.

Any assessment of the effects of his ministrations would necessarily be deficient — what amount of good or ill Elmhirst wrought as he cantered through the South Yorkshire countryside may become clearer upon the transcription and editing of the Journal and comparision between it and other contemporary evidence. There was a wide range of differences between the practices of different apothecaries as is at once evident by comparing Elmhirst with his almost exact contemporary Crabbe, whose dismal experiences caused him to abandon the role of apothecary and turn to poetry and the Church and which coloured darkly the view given of the apothecary in his poem "The Village". Elmhirst, successful and well paid on the other hand continued to skirmish on the frontiers of medical practice — as witness his use of inoculation techniques — as well as to continue established methods. Is one, however, correct in thinking in terms of extending and exploring frontiers for 18th century apothecaries and if so, with what wider implications? Medicine and surgery were by common consent doing so during this century and it would be tedious to repeat well known examples of improved practice and knowledge. The apothecaries, retreating from behind the shop counter and making inroads into medicine and surgery and towards the status of general practitioner, were members of a group which, also increasing in numbers,

* Abstract from a paper given at the Spring Conference, York, April 1984

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catered, as has been seen, for the great bulk of the population. Their personal role in helping to reduce mortality in the light of this, has been ignored in appraisals of what the causes of that falling mortality might be during the 18th century. Even McKeown and Brown, whose view of contemporary medicine is well known and gloomy, concede that some improvements occurred.[8] A re-appraisal of the apothecarys' role would appear to be overdue. It is not enough to denigrate contemporary medical and surgical practice when compared with latter day standards — the question should be, was the surgeon-apothecary of 1800 better equipped to heal the sick than had been his predecessor in 1700?

Footnotes

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Two 17th Century Women Apothecaries

By F.H. Rawlings

Frequently a widow of a Bristol Burgess continued to practice the trade or profession of her dead husband, but usually only for a short time. Whilst searching the Bristol Apprentice Books for records of apothecary apprentices details were found of two women continuing to practice as apothecaries long after the death of their husbands and even taking and training apothecary apprentices.

Elioner Martin

Of husband, William, there is no record in the Bristol Burgess Books of his registering as an apothecary. The Apprentice Books contain no record of his serving an apprenticeship. There are however, four records of apothecary apprentices to William Martin between 1644 and 1654:-

7/5/1644	Thomas Story*
30/7/1646	Henry Moore*
8/8/1651	James Bridges*
1/6/1654	Philip Read

* There are no entries for these in the Burgess Books.

The Burgess Book record for Philip Read in 1676 notes that he served out his time with Elioner Martin the widow of William.

William Martin must have died around 1654-1655, because the Apprentice Book records on 4/10/1655 Jeremy Martin, son of William Martin, Apothecary, late of the City of Bristol, apprenticed to Elioner Martin, late wife of the said William.

There is a gap in the Apprentice Book records between 1658 and 1670 which is only partially filled by 'Rough copy books', these contain no records for Elioner Martin.

After 1670 three more records appear for apprentices to Elioner Martin widow of William Martin, Apothecary.:-

27/2/1670/1	Simon Stephens
2/5/1672	Samuel Jacobs
9/12/1674	Robert Whitchurch

Samuel Jacobs was made Burgess in 1708 with the note that he served out his time with Philip Read.

The duration of the apprenticeship of Thomas Story was eight years, the remainder were for seven years.

Sara Bennet.

John Bennet is recorded in the Apprentice Book 8/10/1633 as being apprenticed to Richard Colston, Apothecary, for seven years, and was made a Burgess in 1641.

Apprentice Book records:-

26/5/1642	William Collins to John Bennet, Pharmacopolo, for 7 years.
24/4/1655	Thomas Grainger to Sara Bennet late wife of John Bennet late of City of Bristol, Apothecary, for 7 years.
23/1/1672/3	Thomas Grainger, son of Thomas of the Bristol, Apothecary defunct, to Sara Bennet, widow of John Bennet, Apothecary defunct, for 7 years.

None of these apprentices were made Burgesses.

Speculation

That the last apprentice to the husband remained with the widow as an employee apothecary is supported by:-

a). Philip Read not registering as a Burgess until 1676, presumably on the death of Elioner Martin he took over the business on his own account.

b). Similarly William Collins did not register as a Burgess, but must have been an employee of Sara Bennet, enabling her to take as apprentice Thomas Grainger. In his turn Grainger may have remained in her employ until his death when she took his son as an apprentice.

It may have been common practice after completion of an apprenticeship for an apothecary apprentice to work for a registered apothecary (i.e. a Burgess) and only becoming a Burgess if and when he commenced on his own account.

This could partially explain why only one third of the apothecary apprentices listed in the 1640-1658 and 1670-1684 Books subsequently became Burgesses.

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Book Reviews

A Study of the English Apothecary from 1660 to 1760

By JUANITA G. L. BURNBY,
Medical History Supplement No.3. 1983.

London: Wellcome Institute for the History of Medicine. 1983. pp.128, £9.

This fascinating book is based on Dr. Burnby's excellent Ph.D. thesis and covers one of the most interesting periods in the development of medicine and pharmacy in England.

The opening chapter outlines the place of the apothecary in the evolution of medical practice and traces his development and relationship with other health professions. It refers briefly to the early Medical Acts which resulted in the episcopal licencing system, the emergence of the Society of Apothecaries, College of Physicians and Barber-Surgeons' Company. The position of the apothecaries in the provincial gilds is also discussed.

The author attempts the formidable task of outlining the "job-description" of the apothecary of the period. She does so by means of numerous examples which show that differentiation between apothecary, physician, surgeon, chemist, druggist, etc. were much less clear than many historians have assumed.

The chapter about the apothecaries as progenitors shows that, although the majority became general practitioners, others played an important part in the development of several branches of pharmacy. Their practical approach was of great benefit to both professions. There are references to many able and ingenious persons and to their numerous discoveries and inventions.

In a chapter "The apothecary as man of science" the author shows their contributions to the development of botany, chemistry and medicine. The extent of these is not widely known, even among many historians of medicine and pharmacy, since comparatively little research has been done on the subject which is worthy of more detailed study for which this book will prove a valuable guide.

The final chapter "Status and social position" is of great importance as it provides ample evidence that many apothecaries were from armigerous and landed families and were often very wealthy men — far from the impoverished tradesmen depicted by so many writers.

Dr. Burnby's book is a very valuable contribution to the history of pharmacy and medicine, especially as it is based on so much of her research into original manuscripts; notably her outstanding work on the apprenticeship records in the Public Record Office.

T.D. Whittet.

Now in one volume
Members will recall the series of articles "A History of British Pharmacognosy 1842-1980" by Emeritis Professor E.J. Shellard published in the *Pharamceutical Journal* between 1980 and 1982.

Many asked the author to gather the material into one volume and he has done so. It is now available in a handy book form (17 x 21 cms) and is a unique reference for historians in that the text provides details of eminent pharmacognosists (Pereira, Daniel Hanbury, Holmes, Greenish and Wallis); the background and development of the PSGB museum and herbaria and that society's contribution to the science. An interesting appendix includes a selection of questions from the society's and university examination papers.

Variations of type and printing throughout the book will not detract from its usefulness. Copies are available from Professor Shellard, 244 Ellerdine Road, Hounslow Middx. TW3 2PY price £2.50 post free.

A Disowned Apothecary

In 1843 Dr Ebenezer Annan, in an advertisement, begged to notify the local inhabitants and those in the surrounding country, that he had opened a drug store at the corner of Bridge Lane, Liverpool, Nova Scotia. He stated he intended to keep a regular supply of patent medicines drugs etc imported "from the Old Country" and "not as is generally the case here, from the United States, where adulteration is carried on to an inconceivable extent". Among the items on offer were: the East Indian corn plaster; Dr Gregory's antibilious pills and "The Father Matthew Bitters", temperance bitters for all those affected with weak stomachs. Ebenezer Annan, the son of Dr Robert Annan of Kinross served an apprenticeship of 5 years to Alexander Miller, surgeon and apothecary in Edinburgh 1836-41.

Ebenezer sailed to Nova Scotia after his father disowned him because of his "lowly" marriage to Susan, a farmer's daughter who lived in Ivybridge, near Plymouth.

Letters written to his wife when he was on board the sailing ship and after his arrival in Nova Scotia tell of his lodgings and his various payments. Susan joined her husband after he had established himself at the Nova Scotia drug store. She made the journey by mail coach then by the comparative comfort of a steamboat at Ebenezer's advice as she was expecting her first child. Ebenezer asked her to bring tea as it was very expensive in N.S. He expressed concern of her travelling alone in her condition and how he yearned to have her with him.

Unfortunately he died at the early age of twenty seven. He contracted consumption through exposure when attending a confinement "out in the wilds" during winter time.

Susan continued to run the apothecary's shop and drug store until she remarried and returned to England.

She later married into the Tearle family and so became the grandmother of the Shakespearean actor Sir Godfrey Tearle who died not long after being knighted in 1951.

Editor's Note
The above was provided by Mrs Stella Birchall, the great granddaugther of Ebenezer Annan, whose family has the letters and a copy of the indenture and advertisement. She would be grateful if any member could provide further details of Robert Annan of Kinross and his family. It is known that he had two daughters as well as Ebenezer so the name "will have died out". Information sent to the Editor will be forwarded.

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Dastardly Deeds at Dorpat*

By David B. Jack

Two of the most celebrated academics of the last century were the pharmacist, Georg Dragendorff and the pharmacologist and historian Rudolf Kobert. Both men were honorary members of The Pharmaceutical Society of Great Britain and I believe that both these men were badly treated for purely political reasons.

I developed a lasting interest in toxicology and became familiar with the extremely useful Marquis reagent which produces characteristic colours with a wide range of drugs. Almost twenty years later I started to use this reagent again, this time in a university environment and I decided to find out who Marquis was. In my innocence I imagined that I would only have to consult a few textbooks. I was wrong. After several months of spare-time research I managed to track him down to the University of Dorpat.

Dorpat is the old German name for the university and town which to-day is called Tartu and is situated in the Estonian Republic of the Soviet Union. To make things more complicated, at the end of the 19th century there was a period when the Russians renamed the town and the university Yur'ev. Estonia is a fascinating country but also a tragic one, since it has enjoyed less than 25 years of independence in the last 400. It is situated on the eastern shores of the Baltic which in the middle of the 17th century was under Swedish rule. By the time of the French Revolution, Russian influence had been firmly established in the Baltic and the Swedes had been pushed back. Now Estonia was firmly within the Russian Empire and so it remained until the First World War. With its neighbouring countries of Latvia and Lithuania, Estonia enjoyed a brief independence until it was occupied by the Germans in 1941. It was later liberated by the Red Army.

The university

The university was founded in 1632 as the Academia Gustaviana by Gustavus Adolphus. The early years were turbulent reflecting the power struggle in the Baltic between Sweden, Russia and Poland. The nucleus of the modern university was established in 1802 by Tsar Alexander I. During the 19th century the students at Dorpat were largely Baltic Germans whose cultural and intellectual allegiance was always firmly rooted in the West and embodied in the concept of Deutschtum in Ausland. It is important to remember that until 1871 Germany as a united empire did not exist.

The higher education system in Russia at the beginning of the 19th century was highly decentralized and four of the eight universities were located in the western borderlands. At Warsaw and Vilna the language of instruction was Polish, at Helsingfors it was Swedish while at Dorpat is was German.

Initially the faculty of medicine had four professors too: one was expected to give instruction in anatomy, physiology, surgery and midwifery, the second in pathology and clinical studies, the third in dietetics, therapeutics and materia medica while the fourth was responsible for chemistry and pharmaceutics.

By the mid-19th century the Faculty of Philosophy had been split into two: the Historico-Philological (Arts) Faculty and the Physico-Mathematical (Science) Faculty. Chemistry was put into the latter while pharmacy and pharmacology remained in the Faculty of Medicine.

Pharmacy at Dorpat

The chair in pharmacy was not established until 1843 when its first holder was Carl Siller from Danzig. He had been educated at Jena and wrote a textbook of pharmacy. He retired in 1850 on the grounds of ill health, emigrated to America and died two years later. Another Carl, Carl Schmidt, succeeded him and occupied the chair for only two years. Schmidt was a Kurlander, a Baltic German, who had studied in Berlin, Giessen and Göttingen under Liebig, Wöhler and Wagner. He then changed faculties taking the chair in chemistry and occupying it until 1892. Schmidt was one of the founding fathers of physiological chemistry. The third Carl, Carl Claus, was born in Dorpat, was a graduate of the university and occupied the chair for twelve years. He made extensive studies of the flora of the Caspian steppe and largely established the subject of pharmaceutical botany in Russia. He was also an experienced chemist who made a special study of the platinum group of metals and is credited with the discovery of the element ruthenium, the only naturally occurring element to be discovered in Russsia. Rutheniem is the Latinized name for Russia. His contribution to pharmacy at Dorpat was extremely important but even that was dwarfed by that of his successor, Georg Dragendorff.

Dragendorff was a German (not of Baltic stock) and was born in Rostock in 1836. He qualified as a pharmacist there before going to Heidelberg to extend his knowledge of chemistry. He returned to Rostock to gain his doctorate and at the age of 26 accepted an invitation from the Pharmaceutical Society of St. Petersburg to edit their publication the Russian Phamaceutical Journal *"Pharmaceutische Zeitschrift für Russland"*. It was not surprising that the major Russian pharmacy publication was in German since the majority of pharmacists in Russia were either of German stock or were German-trained. He also became director of the society's laboratories and published a number of papers on the chemical analysis of plants, minerals and drugs and even undertook an examination of the quality of the air in a St. Petersburg prison. In 1864 he accepted the chair in pharmacy at Dorpat and directorship of the pharmaceutical institute. During his thirty year stay he established an international reputation as a teacher, researcher and writer. He and his students were responsible for over 400 publications which included the chemical analysis of Brazilian coffees, the control of the arsenic content of carpets, the detection of blood stains and fish poisons from Africa. He also wrote two influential textbooks which were translated into a number of languages including French and English. These were *"The Forensic Chemical Investigation of Poisons"* first published in 1868 and *"The Qualitative and Quantitative Analysis of Plants and their Constituents"* published in 1881. Dragendorff received many

* Abstract from a lecture given to the society on November 10, 1983

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international honours including doctorates and honorary memberships of several pharmaceutical societies including the PSGB (he was awarded the Hanbury Medal in 1885). The early start of term at Dorpat prevented him from attending in person and the medal was accepted on his behalf by the Russian Chargé d'Affaires. His reputation attracted to Dorpat many scholars from abroad including Henry Greenish who spent two years there and translated Dragendorff's book on plant analysis into English. Dragendorff also served as Pro-rector at Dorpat for a four year period from 1883-1887 and dean of the faculty from 1888-1894. He left Dorpat in December 1894 and returned to his native Rostock where he died in 1898.

Pharmacology at Dorpat

The chair in pharmacology was founded in 1846, some three years after the chair in pharmacy. There are many famous names among the holders of the chair during the 19th century. The first, Rudolf Buchheim, was from Saxony and he studied in Leipzig. He set up what is now regarded as the first laboratory for experimental pharmacology in the world. This was initially in his own home but he eventually managed to persuade the university to build a pharmacological institute. With these facilities for research, Buchheim laid the foundations of experimental pharmacology with work that was carried on by a succession of his pupils who became celebrated pharmacologists in their own right. Buchheim was succeeded in 1867 by his pupil Oswald Schmiedeberg. Schmiedeberg was a Kurlander but he did not stay long at Dorpat. The Franco-Prussian War took place in 1870 and events were set in motion which had a great significance for Dorpat. From the 1860's onwards there had been sporadic attempts by the Russians to reduce the amount of teaching in German and the number of German staff at Dorpat. This had met with strong resistance from the staff and the Ritterschaften and little progress was made in this direction. The Baltic Germans had maintained cultural ties with the fragmented collection of German states. However, with Bismarck's successful unification of the German Empire in 1871 the Russians became very uneasy indeed. For the first time there was the real possibility that the Baltic Germans could have a political allegance elsewhere. The Germans, who were the victors in the Franco-Prussian War, wished to set up in Strasburg a showcase of German science and in part fulfilment of this aim they invited Schmiedeberg to accept the chair in pharmacology there. Schmiedeberg accepted but remained at heart a Baltic German returning home every summer to plan his research for the next year.

Schmiedeberg was succeeded by Rudolf Böhm, a German who had studied at Munich. He spent nine years at Dorpat before moving on to Marburg in 1881. His place was taken by another German and pupil of Schmiedeberg, Hans Horst Meyer. He stayed briefly at Dorpat before following Böhm's footsteps to Marburg and then to Vienna. His place was taken by Rudolf Kobert, a German from Saxony who remained in Dorpat until 1897.

All these men established international reputations and were responsible for the epithet "the cradle of pharmacology" being attached to Dorpat.

Rudolf Kobert and Georg Dragendorff worked successfully side by side for a period of about eight years. Kobert was as active in pharmacology as Dragendorff was in pharmacy and, in addition to his *Textbook of Pharmacotherapy*, he produced two important series. The first *"Arbeiten des Pharmakologischen Institutes zu Dorpat"* was in 14 volumes and was published between 1888 and 1896 and described research carried out at Dorpat and by students who had trained there. The second series *"Historische Studien aus dem Pharmakologischen Institute der Kaiserlichen Universität Dorpat"* was in 5 volumes and was published between 1889 and 1896. Both give detailed accounts of the pharmacology and toxicology of iron, chromium, tungsten and uranium salts, studies of the pharmacology of ricin and aconite, and volume 14 of the "Arbeiten" contains the important work by Marquis on the absorption, distribution and metabolism of morphine in the cat.

Russification

We have seen the important contribution of the Germans and Baltic Germans to pharmacy and pharmacology at Dorpat. As early as the 1860's clouds were gathering on the horizon as the Russian authorities tried to tighten their control of the Baltic provinces in general and their intellectual focus, the University of Dorpat, in particular.

During his reign Tsar Alexander II had made attempts to increase the study of the Russian language at Dorpat and had tried to introduce it into the daily running of the university with little success.

Alexander III who followed him had more luck. In 1885 there was passed a ukaz which demanded the exclusive use of Russian in the Baltic mixed crown-estate offices. In 1887 the gradual introduction of Russian as the language of instruction in the Dorpat regional schools was ordered and in 1893 the final blow fell. The Russians changed the name of the town and the university to Yur'ev. From then on the language of instruction was to be Russian and all public debates, speeches and academic ceremonies were to be conducted in that language.

The difficulties this posed the German professoriate, who were largely non-Russian speakers, can be imagined. Many simply left or were forced to leave and it is in this context that I now propose to examine the treatment of Georg Dragendorff and Rudolf Kobert.

Dragendorff and Kobert

Dragendorff retired from his chair in December 1894 and this event was noted in Great Britain and commented upon by an entry in the December 15th issue of the *Chemist and Druggist*. The article claims that Kobert left at the same time but that was a mistake since he remained there until 1897. Perhaps he had made his intention to resign known. C & D states:— "The fact that two professors of closely-allied sciences, holding chairs at the same university, resign simultaneously, and apparently quite unexpectedly, is in itself sufficiently strange to call for special notice; but the circumstance that the two dignitaries in question are men whose names are honorably known throughout the world of chemistry and pharmacy lend additional interest to the event." and then .... "Professor Kobert, who is a corresponding member of the Pharmaceutical Society of Great Britain, has received many honours from the Russian Government in consideration of his work in connection with the editing of the 'Pharmacopoea Russica'; in spite of which it is an open secret that he has been practically forced out of his professorial chair, along with his colleague Dragendorff, on account of his non-Russian birth..."

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Information on this intriguing topic is difficult to come by but I have managed to piece together some evidence.

Roderich von Engelhardt, a Baltic historian who lived in Dorpat wrote a history of the university and in it he mentions breifly Dragendorff's "Entlassung" i.e. dismissal, not resignation. I have so far been unable to find a detailed account of the matter. However, the villain of the piece, Dragendorff's successor was the Russian Ivan Kondakov. Kondakov was born in 1857 in the Viluisk-Yakutsk province of Siberia and was an organic chemist by training, having studied at St. Petersburg under Butlerov. He obtained his magister degree in 1893 and then went to the university of Warsaw. As far as I have been able to find out there is no evidence that he ever qualified as a pharmacist. However, he arrived at Dorpat (now Yur'ev) in February 1895 as an extraordinary professor. And that he certainly was! Von Engelhardt gives a brief but fascinating account of a lecture given by Kondakov. It is not clear from von Engelhardt's account if this was his inaugural lecture, but the evidence suggests that it was. He was whistled down by his audience who then streamed out of the lecture, glassware was broken, chlorine gas was released and water taps were turned on. A general boycott of his lectures was proposed and 96 pharmacists and 27 students were banned from the institute. Kondakov lay low in St. Petersburg until things quietened down because he was afraid of being attacked physically. What sort of lecture had provoked this reaction?

We are very fortunate in that the text of his inaugural lecture was published in Vasileev's short-lived journal *Meditsina*. It is some 8000 words long. The first words of the title are innocuous enough. "A short historical sketch of developments in pharmacy. . " but there is a sting in the tail "and the reasons for the decline of a school of pharmacy". Most of the article is a longwinded ramble through the history of medicine, pharmacy and chemistry. Neither Dragendorff or Kobert are mentioned by name but there are passages which refer to a general dissatisfaction with the state of pharmaceutical education.

It is hardly surprising that the students reacted in this way. Dragendorff was highly esteemed and had left Dorpat just over a month before after a 25 year stint, the last five as dean of the faculty. And here he was being criticised by a man who was not even a pharmacist. Kondakov did not confine himself to attacks on the now absent Dragendorff. Kobert still occupied the chair of pharmacology and the duties of the two men were such that they were forced into close contact.

Again von Engelhardt gives us a tantalising glimpse. At a sitting of the faculty there came up for discussion a doctoral thesis by one of Kobert's students. Kobert had submitted his report on the work. Kondakov put forward his own opinion on three sheets of paper criticising the thesis and its supervisor, Kobert. In contradiction of the faculty rules there was no accompanying German translation of his opinion. Instead of asking for an official translation, Kobert (who did not speak Russian) asked to be allowed to take Kondakov's report home to have it translated by one of his assistants. By a sleight of hand Kondakov swapped papers and gave Kobert the Russian translation of his own (i.e. Kobert's) comments. Only when his assistant came to translate it did Kobert realise the trick that Kondakov had played upon him. Von Engelhardt records that the dean remarked that he would not have believed it if he had not seen it with his own eyes. After what must have been two very difficult years Kobert left to take up the directorship of a sanitorium at Görbersdorf near Breslau.

Well, did standards decline at Dorpat during the 1890's or were Dragendorff and Kobert badly treated for largely political motives? There is, unfortunately, little information readily available.

It is my opinion that Dragendorff and Kobert remained highly effective teachers and productive researchers to the end. According to the Russian Levitski, who compiled a 1300 page biographical dictionary of the professors and teachers at Dorpat from 1802-1902, Dragendorff reached the end of his 25 years service in 1889. This is certainly true. Levitski goes on to say that a unanimous vote of the university council allowed him a further five years. This would hardly have been granted to a man who was a spent force. I think it is important to give more credence to a report like this from a Russian. Interesting too is the fact that Dragendorff's entry in the biographical dictionary was written by Levitski himself. Normally Professor of departments wrote the entries of their predecessors. Tschirwinski, the Pole, wrote the entry on Kobert which is short but sympathetic. Normally Kondakov should have written Dragendorff's. The fact that Levitski, who was the professor of Astronomy, wrote it is significant.

Subtle approach?

I have been unable to find any direct reply by Dragendorff to the veiled attack made upon him by Kondakov. However, since the inaugural lecture did not mention him by name perhaps this is the reason. Or perhaps Dragendorff adopted a more subtle approach. Dragendorff did publish something very interesting only three months after Kondakov's lecture was published. In 1885, ten years earlier, Dragendorff published in the *Russian Pharmaceutical Journal* an account of his institute's work for the period January 1865 - December 1884. In May of 1895, three months after Kondakov's inaugural lecture, Dragendorff published an account of the institute activities over the previous ten years. The article is extremely detailed and was published in parts in four successive weeks of the journal. In all it occupies 25 pages of text and lists individually the 120 or so publications from the institute over the ten year period together with a number then still in progress. This was probably the best defence of all.

As for Rudolk Kobert, it may well be that he left suddenly in 1897, being replaced by the Pole Tschirwinski, since he took up, as we have seen, directorship of a sanitorium. This seems rather an unusual job for a distinguished academic. Especially since he had had little if any clinical experience in the last 15 years. Kobert's powers were not diminished, however, because it is recorded that he soon transformed the sanitorium and began publishing the *"Görbersdorfer Veröffentlichungen"* which take up where his *"Arbeiten"* left off. In his introduction to this new series he refers to the "violent interruption" of the *Arbeiten*. Kobert stayed at the sanitorium for only two years moving in 1899 to take up an academic post the directorship of the Institute of Pharmacology and Physiological Chemistry at Rostock, Dragendorff's home town. The offer and acceptance of this post is another indication that his powers had not deserted him. Kobert died in Rostock in December 1918.

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To conclude, the evidence that Dragendorff and Kobert were badly treated at Dorpat in the 1890's is strong although the exact circumstances are unclear. I find it difficult to believe that a man with such a keen sense of history as Kobert did not leave some account of the affair behind. As far as I have been able to establish he never published an account of the events. However there could be material somewhere. To-day Rostock is in East Germany and it is difficult to get information.

Not many people know that Dragendorff wrote an autobiography or at least memoires, but these have never been published. The material is in the hands of his descendants in Germany and last year I corresponded with Dr. Jürgen Schwalm, a dermatologist from Lübeck, who told me that the manuscript was in the hands of his grandmother Erna Dragendorff. I have been trying, so far without success, to get a glimpse of even part of this material. According to Schwalm parts of the manuscript had been removed by a relative who was afraid of "indescretions". I sincerely hope that this important document sees the light of day.

Dragendorff himself has been completely rehabilitated in the Soviet Union. Last year the University of Tartu (Dorpat) issued a number of publications to celebrate its 300th anniversary. In the new history of the medical faculty there is a passage which reads as follows "Under the leadership of Georg Dragendorff 150 Magister and Doctoral candidates defended their theses and 23 of these were awarded gold medals." Another passage speaks of ". . the glorious tradition of Professor Georg Dragendorff. . ".

The Crown and Anchor and Gas Lighting

By T. D. Whittet

As we saw in my Foundation Lecture[1] the Crown and Anchor Tavern in the Strand was associated with many developments in the arts and sciences, especially pharmacy and medicine. I have found that it was also the venue for meetings of the first British society for the introduction of gas lighting.

The earliest use of coal gas in Great Britain appears to have been by Lord Dundonald who produced it on his Scottish estates in 1780 and used it to amuse his friends. He saw no practical use for it, only for its bye-products. Another Scotsman William Murdoch made it for the use of his firm Boulton and Watt in their Birmingham factory.

Coal gas as a method of illumination was largely developed by pharmacists. Urdang[2] wrote "It was the Dutch pharmacist J. P. Minkelers (1748-1824) who, in 1783 obtained illuminating gas from coal and thus became the founder of the illuminating gas industry. Another pharmacist, the German W.A. Lampadius (1772-1844) established the first illuminating gas plant on the European continent, while it remained for the pharmacist Fr. Accum. . to put the illuminating gas industry in England on a sound basis. It was Accum who wrote the first book on this subject ever published."

Fredrich Albrecht Winzer, born in Brunswick in 1763, came to England early in the 19th century and adopted the name of Frederick Albert Winsor.[3] He had seen demonstrations by the French Chemist Le Bon who in 1799 had obtained a patent for his method of producing coal gas. Winsor conceived the entirely new idea of carrying the gas from one house to another and even proposed lighting the whole of London, the whole of England, even, with coal gas carried in pipes.

He had purchased 93, 94 and 95 Pall Mall and as a start he set up furnaces and retorts in them. He pointed out that one gas lamp produced as much light as 18 of the oil lamps then in use and has been described as "the first to advocate not only a smokeless zone but a smokeless land."[3]

Winsor who had no scientific training employed a chemist called Clegg and they erected thirteen three-jet lamp posts on the South side of Pall Mall and later increased them.

Scott[3] wrote "On the business side, the Society met at the Crown and Anchor tavern in the Strand and decided to apply to the Chancellor of the Exchequer for a Charter of Incorporation for the New Patriotic Imperial and National Light and Heat Company."

Eventually a Bill was presented to Parliament and after amendment was passed and on June 9th 1810 a company with a different title, The Gas Light and Heat Company was legally recognised. In 1814 permission was granted by the Vestry Committee of St. James's parish to lay down gas mains in Pall Mall and by 1820 the parish was lit by gas.

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1. Whittet, T.D. *Pharmaceutical Historian*, 1983, *13*, No.3, p.2 and No.4, p.5.
2. *Pharmacy's Part in Society*, by G. Urdang, American Institute of the History of Pharmacy, Madison, Wisconsin: 1946, 63
3. *The Book of Pall Mall*, by J.M. Scott, London: William Heinemann, 1965, 91/6.

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Contents

Diary Dates

February 14
Joint meeting with the PSGB, and members of the St. John Historical Society. Speaker Mr Raymond Dickinson. Venue PSGB headquarters.

March 21
Foundation Lecture, Speaker, Charles Drummond. Details to be circulated later.

April 19-21
Spring Conference, based on the Belfry Conference Centre, Brimpton Grange, Milton Common, Oxford OX9 2JW. The centre is a few miles from Oxford and about 200 yards from exit 7 from the M40.

Rooms have *en suite* bathroom, telephone, radio, colour television and tea and coffee making facilities all in an old English Tudor style inn in ten acres of land, and providing excellent, comfortable surroundings for the Conference.

Cost, provisionally estimated at, £60 for the weekend. The Committee is arranging a programme that will embrace topics relating to Oxford and other subjects. Details to be announced later. Members wishing to contribute short papers at the Conference are asked to get in touch with Dr Howden at 36 York Place, Edinburgh, giving details concerning proposed title and content.

May 9
Evening visit to the Wellcome Institute for The History of Medicine, 183 Euston Road, London NW1.
Speaker Mr E.J. Freeman, Librarian and Deputy Director.

OBITUARY
James C. Bloomfield, OBE, FPS, FBOA, JP, treasurer BSHP, died on December 1st after a relatively short illness. "Jimmy" Bloomfield was a past president of The Pharmaceutical Society and its treasurer 1978-81. He served

Photograph, courtesy, Editor, Pharmaceutical Journal.

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on the Society's Council for 27 years and on its Statutory Committee since 1980. He was active in international pharmaceutical affairs, being a prominent member and officer of the International Pharmaceutical Federation. For services to pharmacy and the NHS he was awarded the OBE in 1973 and in 1981 he was presented with the Pharmaceutical Society's Charter Gold Medal.

After the inaugural meeting of the British Society for the History of Pharmacy on June 4th, 1967 a committee elected "Mr. J.C. Bloomfield, president. . ." and since 1970 he has filled the office of treasurer. He was a member of the International Society for the History of Pharmacy, the American Institute of the History of Pharmacy and the Swedish Society for the History of Pharmacy.

His indefatigable efforts on behalf of the BSHP extended beyond his valuable contributions during committee meetings; his enthusiasm and friendly approach were shared among members at meetings and conferences. His wise guidance and acumen husbanded the Society's frail finances ensuring its progress and contributing largely to its stature.

In a letter to the Pharmaceutical press Mr. Mervyn Madge, president, wrote 'Again, after the recent death of Robert Todd, as President of the British Society for the History of Pharmacy, it is my sad position, on behalf of all the members to express the deepest sympathy on the passing of Jim Bloomfield, our treasurer. Others may speak eloquently of his activities on many bodies and organisations national and international, and on the Council of Pharmaceutical Society and in his own community. He was one of the founders of the BSHP and a fervent supporter. His enthusiasm in all that he undertook is legendary, and it was the same in BSHP. His wide knowledge, experience, acumen, and guidance were invaluable, coupled with his friendly and happy approach. We all mourn his passing and I personally mourn a great colleague and friend who was an example to all. We extend a deepfelt sympathy to Joan and the family".

B.P. Conference History Session

Tudor Drug Jars and Surgery

Mediaeval archeologists had been hampered by the art historians who had considered drug jars as art objects according to Mr R.G. Thomson, keeper of archeology and antiquity, Tudor House museum, Southampton. He told the History of Pharmacy session of the 1984 B.P. Conference that there was a great deal of available evidence covering the Tudor period but there was a gap in earlier trading details. Drug jars were practical and useful items and not made for artistic display. Unfortunately any evidence of their original use was destroyed by washing. New analytical techniques involved investigating scrapings from pots or pot fragments to ascertain possible contents. It was painstaking work. In a recent trial of 40 fragments submitted for examination 39 gave negative results, the others indicated "probably olive oil". Washing meant that in most cases any evidence had disappeared before the pots were examined.

Now in Southampton pots or their fragments were "sealed" as they came out of the ground and immediately sent for analysis before washing. Referring to the mediaeval drug trade Mr Thomson said it was known that Southampton had been involved in Mediterranean trade during that period, but there was little documentary evidence.

Fragments of Mediterranean pottery had been found in the Southampton area but there were no cargo records before 1423 from that date imports included aniseed, bay oil, cardamom, cloves, figs, ginger, mastic pepper and waxes.

Southampton archeologists had an advantage in that the port trade had operated on three different sites at various periods of history. The mediaeval site had yielded a specimen of gold leaf, applied to a piece of stone. The gold contained heavy traces of mercury. It was known that the metals were available from Spain and Persia at that time. At Romsey, pottery had been discovered with a glaze of a type used in South West France.

Cone-shaped jars which had been found "all over the world" had an inner glaze but none on the outer surface, indicating it was applied to protect the contents. They were known as Spanish olive jars and were a curious conical shape which could be "stacked beautifully" on ships' decks.

Two small heavy pots both of similar shape had been found which came from distinct geological areas, one Spanish the other Persian. Could they be the first authenticated mercury jars?

The second paper of the session was given by the Vice-Admiral Sir James Wath, president of the Royal Society of Medicine. Its title "Tudor Surgery and the Mary Rose".

Sir James began by emphasising the attributes of Henry VIII. He was extremely well educated, a mathematician, musician and a linguist speaking four languages. He recognised that rural Britain needed to develop its trade with other countries.

The King was interested in naval architecture and he developed the ship into a fighting weapon using broadside guns. Hitherto in Mediaeval times sea battles were chiefly combats between swordsmen and archers.

Of surgery, Sir James said that the surgeons adopted the methods of the "Salerno School", removing foreign matter from wounds, cleansing and then allowing healing by first intention.

Using slides showing surgical instruments of the period Sir James pointed out the contrast between ornately carved handles of instruments manufactured on the continent and the plain, practical handles of British specimens.

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Robert Drane:

No Ordinary Pharmacist

By Dr. J.G.L. Burnby

When pharmacists gather together, there is nothing they like better than to reminisce about pharmacies in which they have worked and the pharmaceutical characters they have met; in such a gathering it is not long before the name of Robert Drane turns up. Irascible, kindly, autocratic, generous, a man of parts, he died 70 years ago on July 14, having nearly attained the age of 81. The son of a congregational minister, one of six children (two of whom died in early childhood), Robert was born at Guestwick, Norfolk on August 21, 1833, 150 years ago.[1]

He became a registered apprentice with Mr Smith of Norwich in the spring of 1850, though whether it was Joseph or Richard Buck Smith of Magdalene Street, the *Pharmaceutical Journal* does not specify.[2] As Mr. T.D. Turner has shown, Robert's first contacts with the Society were disappointing to him.[3] He paid his annual subscription out of the pocket money allowed by his parents but did not think that the *Pharmaceutical Journal* was very useful to aspiring apprentices. He wrote once of the main article being "... not bread but a veritable stone, to wit soapstone rock in the shape of a willow pattern plate, a history of which constituted a pièce de resistance of the current copy." He does not seem to have sat either of the Society's examinations, and certainly is not to be found on the list of membership printed in 1856.

After apprenticeship, which was probably of five years duration, he seems to have soon thought of gaining London experience. Like so many other young pharmacists who were to make their mark in the world, he became an assistant at the Plough Court Pharmacy of Allen and Hanbury's.[4].

There is some doubt as to the exact date he arrived in Cardiff but it must have been in the late 1850s. He worked as an assistant for a short period and then had his own business in Bull Street; by 1867 he was ready to have built, to his own specifications, a truly elegant pharmacy at No. 8 Queen Street, which was to be his home for the remainder of his long life.[5] This dignified building with a hint of the neo-gothic, and simple, highly ethical window, was to see the arrival and departure of many men of note in the worlds of art, antiques and natural history. A man of taste, not to say a gourmet, here, Drane loved to entertain his friends who hailed from very different fields than that of pharmacy. In his diary on September 23, 1903 he recorded, "Mr Walker Chamberlain — brother to Joseph the colonial secretary — here to lunch: turtle soup, broiled sole, truffled partridge, cabinet pudding, stewed plums and boiled custard; he would not drink champagne, sherry or burgundy, commended and seemed to enjoy Chateau d'Yquem & Malmsey, — Fruit, coffee which he took *strong without sugar or milk* and cigars.[6]

For Robert the dinner must have been somewhat spoilt for him by an accident below stairs, though he managed to retain his ironic sense of humour, "The cook broke the stand of the soup tureen of the best dinner service made specially for me in 1877 which will cost £4 to £5 to replace, *and* a cutglass claret jug by way of commemorating the occasion — she said it fell to pieces in her hand and out of pure spite smashed the claret J(ug)."

He was not averse to having his own little private jokes. On November 5, 1881 he wrote, "Mr Holst called, stayed about two hours, a pleasant chat, he smoked and had a glass of Madeira which he thought was Tokay because he had it here last time and this was like it!", or on March 2nd. in the following year, "Mr Tomkins called, spent an hour or more and had a glass of Malmsey which he took for sherry and declined a second glass because 'sherry never agreed with him'." Drane was nevertheless genuinely interested in what Mr Tomkins had to say, for he goes on to write, "He is chief of the executive of the Metropolitan Railway which last year carried 67 millions of passengers and has never killed one by any accident of their own. The first year of his management it carried only 47 millions. He says they will make the tunnel between us and France, that it will never pay the shareholders, that it will be easily ventilated by a huge fan exhausting the air *in advance* of the train so no products of combustion will be breathed by the passengers; it will be a double tunnel to prevent one train running off the line dashing into another on the other line or falling across it. It will be nearest the surface of the sea in the middle of the channel as shewn here (here he had drawn a little diagram) to bring the drainage water to each land end."

Robert Drane never married but by no means did he regard women with disfavour. In the spring of 1881, he appears to have been conducting a delicate little courtship with a Miss Biggins of Llandough, in which he sent her "an 'easter Egg' of basket work and silk fillet with sweets ... in return for Flowers she left me.", to which he attached some sentimental lines. Not to be outdone, two days later she sent him a basket of Easter Eggs and flowers, "very prettily arranged as usual with her." At this period of his life, his older sister Emily, Nem as he called her, was living with him. One cannot but wonder what this Victorian lady thought of the various species of mice and other rodents bought to the house for him to study. He wrote *The Hare in Captivity,* a book based on sound observation of the animal, one might say intimate observation, for it is rumoured that he and his hare shared the same bed.

The book was well received but today he is more particularly remembered for his work on the vole. He was the first person to describe the Skomer Vole which in his diary he relates he discovered in June 1897. He had "five living ones, small and young" brought back from the island on April 24th., 1905 to join the four from the Orkneys which had been born on the 5th. He was meticulous in weighing these Orcadian Voles and noted that at first they gained an average

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of four grains a day which later increased to eight grains. Always he retained his interest in Skomer and in 1905 recorded a description of hundreds of thousands of sea birds, puffins, guillemots, razorbills, arriving in a single night and a day. On May 5th. of that year he noted, "Mr Neale (with his two youngest boys) to report progress in the taking of Skomer and Grassholm Islands for a period of ten years to provide a sanctuary for the rarer wild birds which frequent them for breeding — Raven, chough, sheerwater (sic) petrel, short-eared owl, peregrine falcon etc., etc."[7]

Not unexpectedly Robert Drane was a founder-member of the Cardiff Naturalists' Society in 1867, and was a driving force throughout his lifetime. In the same year he was made an honorary curator of the neglected Cardiff Museum. His interest in this never ceased; as Rollo Charles has written, "His diaries tell of hours spent, over many years, in service on its Committee; of his friendship with one Curator; and his criticism, disapproval and dislike of a successor; of his loan of a fine and representative selection of his Worcester china, for which he also provided a printed catalogue; and of many gifts. In the course of time the Cardiff Museum became the National Museum of Wales, and Drane found himself on the Council concerned with the appointment of the first Director, and with plans for the building."[8]

One of his special interests was ceramics, and in this field he gained a well deserved reputation, amounting to deference, in his day. Drane developed methods of comparative collecting based on careful observation and deduction in which he was a man ahead of his time. He moved as an equal and as a friend with such famous collectors and historians of ceramics and silver as Trapnell, Bemrose and Jackson. It was Drane who in 1902 advocated the purchasing of type-specimens of English pottery by the Museum, and was allotted £200 for the purpose. His collections were not confined to ceramics, but ranged over such items as pomanders, an assemblage of rat-tailed spoons, silver cream jugs or cutlery, even such small items as a silk pin-cushion of the Commonwealth period, and a circular beechwood box dated 1554 which cost him £10.

Every year at the end of his diary he noted how much he had spent on his collections that year. At the end of the diary for 1907, he listed the sums of money spent for all the years between 1888 and 1911, the figures ranging from £66 to £1,418; he calculated that over the course of 20 years the average annual expenditure was £468. Holidays did not loom so large in people's lives as they do today, and usually Robert Drane's breaks were short, such as expeditions to Ramsey or Skomer, or five days with the Cambrian Archaeological Association at Church Stretton, or day trips to London to see some authority on antiques, or to Birmingham to spend two hours with Cardinal Newman, but in the winter of 1907 to 8, at the age of 74, he made a trip to Egypt with his friends Mr and Mrs Neale.

He left Cardiff on December 5th. at 5 p.m., and the following morning departed for Paris. Although he had relatives in that city, he did not stay but went straight on to Marseilles in a first class sleeper; there he embarked on the S.S. Heliopolis which was on her "virgin trip".[9] They reached Alexandria on the 11th. and continued on to Cairo. As may be guessed, one of his first ports of call was the museum, the ticket for which is still touchingly pasted into his diary. As nearly everybody did in those days, they hired

Robert Drane's shop and home, Queen Street, Cardiff — courtesy Glamorgan record office.

a "dragoman" or guide, Hamet Chaar, of whom he wrote he was "... very intelligent but insatiable for commissions on purchases made at 25 to 33%". The delights of Cairo having been exhausted they then joined the Anglo-American Nile steamer Victoria on December 20th. They were on board for Christmas dinner, the menu card for which shows that it included roast turkey with chestnuts and "Plumpudding Flambant" — traditional but scarcely suitable for Egypt.

Excursions were made to Abydos, Luxor, Thebes, Medinet-Abou, Assouan, and then they finally tied up at the north end of Elephant Island. A 27-hour train journey from Wady Halfa then took them to Khartoum. Although the travel and the heat must have been trying for a man of Robert Drane's age, there were no grumbles with the exception of his comments on the Grand Hotel, Khartoum, "... the worst managed Hotel of any pretensions that I was ever at, and left it next day for the Gordon Hotel; stayed there until 12th.", when they returned to Halfa and Assouan. During this Nile trip to the Sudan, he had become particularly friendly with the ship's doctor, Dr Fenton, and Baron and Baroness Bethune. When they parted company the baroness gave him a matchbox of polished onyx, and he in return, a silver gilt filigree bracelet and confided to his diary that she was "one of the most polished and fascinating women I have ever known."

The practice of pharmacy by no means fully absorbed the active mind of Robert Drane but nevertheless he was a "good pharmacist". When he was deputed in January 1905 to propose "The Toast of the Town and Trade of Cardiff" at the annual dinner of the Pharmaceutical Association, he

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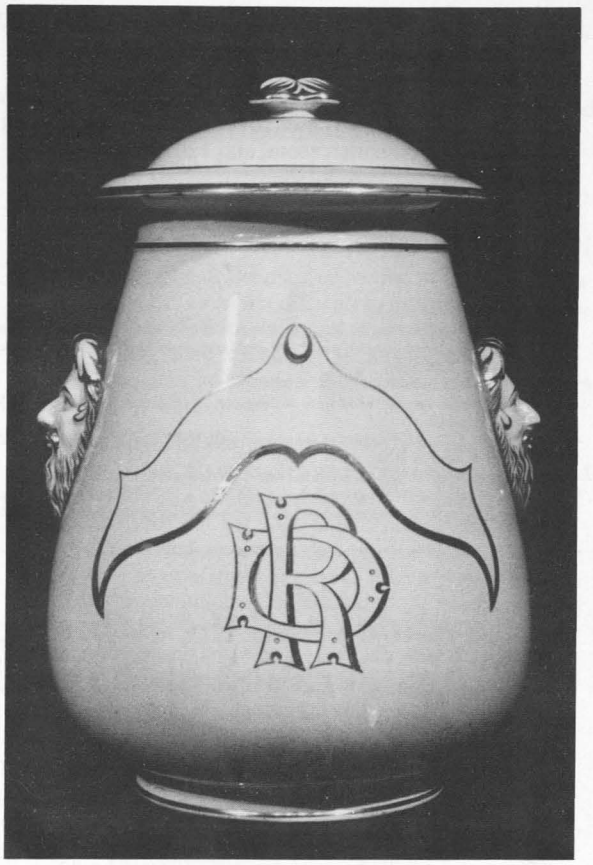
spoke, as he phrased it, "at some length as to the chemists' share of it", and strongly advocated unity amongst pharmacists. Highly critical of the Society's council he might be, but such criticism was only levied within the profession itself. In March of the same year he was interested enough to make an excursion to London with Messrs Mumford and Bellamy to see the Chemists' Exhibition.

In his old age he became cantankerous, and many of his assistants in the shop, and servants in the house did not stay long; their arrivals and departures being noted in the diaries by amusing little pin-men (? pin-person) drawings, often accompanied by a pungent comment. Porters in particular seem to have drawn down his ire and were the recipients of such remarks as "slow, stupid and wholly without manners". Some assistants, such as Arthur Bailey (1902-4) returned for a second spell, but the old adage that this is an unwise practice seems to have held true.

When J.R. Williamson left on December 22, 1906 after eleven months with him, Drane wrote, "a very capital chap who wishes to return if he can after passing his exam", which he did as junior assistant the following May 1st. The reunion did not last long, September 30th. saw Robert furiously writing "The most selfish young man I have ever had as an assistant; he was receiving £52 a year, i.e. £12 more than I ever gave. Williamson was dissatisfied for he is reported as considering himself worth £100 a year, age 21-2." He was replaced by Mr B. Guillaume of 16 Market Sq., Aylesbury, "at his own valuation for the same work, at £30 a year in the house and "all found" in both cases." Other assistants stayed for many years and undoubtedly were largely responsible for running the pharmacy, men such as Robert Graves who came in 1880, aged 26, and was with him for 30 years, or Alec Johnson who arrived on the scene in 1905 and was still with him at the time of Drane's death.[10]

Of his apprentices we know rather less. In 1871 Joseph Llewellin was living in, as was Charles G. Skyrme ten years later. Charlie (who took the little Easter gift to Miss Biggin) was probably related to the non-resident apprentice H.E. Skyrme. Harry left Robert Drane on January 15, 1883 for London experience. In the capital he went to 13, Curzon Street, the pharmacy of George Jolley; Harry's late apprentice master noted with satisfaction on April 30th. that he had received a long letter in which Harry "continues to like his situation in Mayfair as one of the best obtainable in London but says we live better and do things quite as well or better."[11] A friendly relationship always existed between Robert Drane and the Skyrme family; there are frequent references to Dr Skyrme and to Mr and Mrs H.E. Skyrme, who on one never to be forgotten occasion in 1905 took him to "The Empire" — "the first time I have ever been in the place; Entertainment good of its kind; Vulgarly respectable, amusing, spectacular and vacuous. Once in a "Blue Moon" sufficient for *me*"[12]

By 1914 when Maurice Roots joined the practice as a qualified assistant, Robert Drane was little seen in the shop except to supervise the unpacking of some new ceramic treasure he had had sent "on appro.", and woe betide anyone who handled it roughly.[13] Drane made his will on July 4, 1914, and died ten days later. His brother William of Kingston-on-Thames, and his friend Joshua John Neale of Penarth, merchant, were made executors. His will is



Drug jar bearing Drane's initials. From the Pharmaceutical Society's collection.

evidence of many little kindnesses; £50 to his housekeeper, £50 to his late cook who had prepared so many exciting meals for him, being nothing daunted by pink bananas, custard apples, mangoes or capercaillies, his Sèvres china dessert service to Mrs Geraldine Bird of St. Fagan's, at whose house he had interrogated and come to like Richard Kearton, and where he had had many happy evenings discussing ornitholgy with Mr Bird. His godchild Enid Skyrme was to have £100, and J.J. Neale the white and gold Worcester dinner service.

The disposal of his fine collections had considerably exercised his mind. He directed that his books dealing with the Reformation were to be sold by public auction by Sotherans of London, and his collections of pomanders, cream jugs, drinking vessels, spoons, knives and forks, each collection complete, by Christie's. Most important of all, he desired the executors to offer to Herbert Eccles of Neath his whole collection of Worcester china at the prices shown in the catalogue he had recently had complied, "... but in no case for less than £13,000". Failing acceptance it was to go to Christie's and be offered in one lot and advertised showing the system upon which the pieces were brought together.[14]

From a pharmacist's point of view, the most interesting bequest was that of the shop. He bequeathed the good-will and stock in trade, effects employed, and benefit of all contracts, "one moiety to my assistant Alec Samuel

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Williams Johnson and the other moiety equally between my assistants Arthur James Harris and Edward Jones ... to enter into partnership or form a company..." And so was saved, at least for the time being, this fine ethical pharmacy where galenicals were prepared in the cellar, minor ailments treated in the examination room, and 19th century patent medicines were scorned, its shelves adorned with Bristol blue shop rounds and a fine set of Minton procelain drug jars bearing his initials which had been commissioned in 1868.

Notes and References.

1. Robert Drane could trace his family back to at least his great-grandfather, William Drane, who married Esther Harmer. His own father married Frances Anna Rudkin in 1824 in his 25th year.
2. **Pharmaceutical Journal,** 1849-50, **9,** 382.
3. **The British Society for the History of Pharmacy, Cardiff conference, Pharm. J.** 1968, **200,** p.617.
4. Matthews, L.G., **Pharmacists in the wider world,** Hounslow, Merrell, 1981, p.19.
5. Later re-numbered to No. 16.
6. He found the black coffee so remarkable that he underlined it.
7. "The Neales, also of Cardiff, took the lease in 1905 ... Information on the seabird colonies had now become widespread and as a result of increased disturbance both photography and general visiting was prohibited by the Neales in 1909." see **Skomer Island,** West Wales Naturalists' Trust, (n.d.) p.13.
8. Charles, R., "Robert Drane and the Ceramics Collection", **Amgueddfa,** 1974, **17,** 18.
9. He wrote in his diary on May 4, 1883, "My niece Emily Skepper of Paris wrote to announce her engagement to a Mr Alfred Cocking. They propose to be married in July. I hope he is something more of a gentleman than the last one she was engaged to, but am afraid a man of nice order of mind, character and education would hardly be attracted by Emilie." His sister went to the 'benediction nuptiale' at the Église Anglaise, but not himself.
10. Alec Johnson also had an interest in ceramics, see **Chemist & Druggist,** June 28, 1930, "Alec S. Johnson's collection of pharmacy potts."
11. The Mayfair pharmacy on the corner of Queen Street was owned by Edmond Nettleship chemist, in 1844, and taken over by Jolley in 1852.
12. Henry Edward Skyrme was a registered apprentice from 1878-81 and qualified as a chemist and druggist in 1882, remaining on the register until 1890 when he had returned to Cardiff. Henry appears to have had a brother, Harold Edgar Skyrme who qualified in 1889 after being apprenticed at Neves' & Co. of St. Leonard's. Harold opened a pharmacy in Hastings for his brother which he subsequently acquired; he died in that town in January 1930.
13. Maurice Henry Roots was born in March 1877 at Strood, Kent, the son of a chemist and druggist turned dentist; he qualified in 1913 and after a varied career settled as manager of E. Bing & Son (later Savory & Moore) of Canterbury.
14. In the event, Herbert Eccles, High Sheriff and mining engineer, bought the Worcester collection, which he then sold to Amor's St. James; the other collections were sold at Sotheby's in June 1916, the sale lasting three days.
15. Robert Drane's diaries, which are almost complete from 1881 to 1931, are to be found at the Glamorgan Record Office, Cardiff, and I am grateful to the archivist for allowing me to examine them.

Thucydides and the Athenian Plague: A reconsideration of the evidence

The account of the Plague of Athens in the *History of Thucydides* was an arsenical mass catastrophe which befell the Athenians during the period 430 to 426 B.C., and not as Thucydides believed a contagious disease. That suggestion was put forward by Mr R. E. Walker, veterinary surgeon in his paper "Thucydides and the Athenian Plague: A Reconsideration of the evidence" given at an evening meeting of the society on May 10, he pointed out that Thucydides described a score of symptoms in some detail all of which were either typical of arsenical poisoning or commonly associated with the condition. The principal curiosity of the plague was the effect upon any dogs or carrion eating birds which scavenged corpses. Dogs were seen to die and such birds disappeared from Athens. No commentary or medical interpretation had yet dealt satisfactorily with the matter; upon which Thucydides was explicit. Dogs and birds were highly susceptible to arsenic poisoning. No contagious infectious disease existed which could have the effects described by Thucydides — "First intense heat in the head, redness and inflammation of the eyes, inside the mouth the throat and tongue appeared bloody and the breath was unnatural and foul."

From the abundant medical literature it was possible to glean numerous references to suffusion of the conjunctivae, lacrimation, periorbital oedema and severe headaches. A paper by H. Lander and P.R. Hodge, *Arsenic in the Hair and Nails; Its significance in Acute Arsenical Poisoning,* Journal of Forensic Medicine, (1965), **12,** (2), pp. 52-67, recorded several cases in which oral burns, garlic odour of breath, conjunctival suffusion, pounding headache and periorbital oedema were featured. Poulson and Tattersall, *Clinical Toxicology,* p. 198, described dryness of the mouth and "a tongue that bears a silvery-white fur overlying red raw tissue."

A mass of clinical and anecdotal material was to be found in *Taylor's Principles and Practice of Medical Jurisprudence,* 7th Edition, Volume II, pp. 488-521. There was remarkable concordance between Thucydides and Taylor's references to acute arsenical poisoning.

The largest epidemics of arsenical poisoning had been caused by the contamination of liquids such as drinking water, milk or alcoholic beverages. It is believed that 12,083 children were involved in an incident with poisoned milk in Morinaga, western Japan, in 1955. In Manchester during 1900 some 6000 people were affected by drinking contaminated beer. That disaster prompted the sitting of a Royal Commission. Only 170 or so, deaths resulted but ample observation was made of the symptoms of chronic arscenicism. The symptoms described include coryza, huskiness, lacrimation, gastrointestinal disturbances and diarrhoea, peripheral neuritis, herpes and aerythromelalgia and chronic skin damage.

Of particular interest was an outbreak at Hyères in 1887 in which about 400 people were affected by arsenical poisoning, the poison having been accidently introduced into wine which was drunk by many people for a considerable time.

Understandably, no studies had been made on the mortality of dogs or birds of prey which had consumed human cadavers during a mass arsenical catastrophe. It should, however, be possible to make some predictions about the results of such an event and it could be safely deduced that at the height of the Athenian catastrophe when thousands were dying and hundreds of corpses were available for scavenging, sufficient arsenic was available to the carrion eaters to ensure a subtantial mortality among them. An average human liver of about 2 kg could contain enough arsenic to kill a number of birds and a small dog or two.

The obstacles in the path of an interpretation of Thucydides' concise and accurate account of an arsenical mass catastrophe had been placed there by his own

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eloquence. His powerful narrative conveyed his conviction that the Athenians were the victims of a virulent contagion. The notion of a great pestilence has dominated the view of medical historians.

From an epidemiological point of view there was something very wrong with this picture. "A virulent contagion apparently spreads over a vast area of the Eastern Mediterranean and then finally arrives at Athens and disappears like smoke into a bottle."

Thucydides' personal conviction of the contagious nature of the disease did not derive from the helpful stories of sailors. He observed that the doctors suffered high mortality and relatives who attended the sick caught the disease. Thucydides described the elation of those who recovered and considered themselves immune from further attacks. The answer to the problems must lie with the nature of the vehicle for the poison and the way in which it was distributed.

Even without the prompting of the historical examples, wine offered the best explanation for the transmission of the poison. It was a universal drink, an essential part of military supplies, and a vehicle in which the arsenic would not be detectable by sight or taste. The period of the plague which was four years overall would match the three or four year 'life' of a Greek vintage. A single accident with one consignment or ship load would have accomplished the entire disaster.

The source

Arsenic was available to the Greeks in the form of sthe sulphide ores, realgar and orpiment. Any heating of the arsenic ores would have resulted in a progressive increase in the arsenic trioxide content. The ancient, empirical attempt to improve the colour of homogeneity of such pigments must have resulted in many opportunities for over roasting and the production of unwanted oxide.

Arsenic trioxide the infamous white arsenic met with modern times in the form of broken lumps, cakes or white, gritty powder. It was easy to confuse arsenic with other white powders such as flour, chalk, gypsum. sulphate of lime and by virtue of its tastelessness it has been undetected in a great range of foods and drinks.

Obviously the Athenian catastrophe could have occurred during the tumult and urgency of provisioning the city against siege. The vintage of 432 would be ready in February 431 and may have been hastily stored in the city amid the confusion of the mass collection of the population within the walls. It was not difficult to imagine storage jars which had been used for the keeping of arsenical paint suddenly being filled with wine. Such paint would be a normal material to be found in the shipsheds and magazines of the naval harbour.

The duration of the plague suggested a large number of sealed amphorae. Many such groups of jars would be stored and presumably an attempt made to use them up in some form of rotation. The three to four year life of the wine would demand that care was taken to issue stocks within their time. The final outbreak in 427 after a year of relative remission, might suggest that the last of the poisoned stock was discovered to be in its 4th year and was issued that winter. New supplies would arrive each spring with the onset of the safe sailing season.

The toxicologist investigating a catastrophy of this type must look for the most simple accident which will have the greatest effect. The best opportunity of contaminating a large amount of wine would arise when the bulk consignment was treated as an after-thought to enhance its, appearance, taste or keeping quanlities. The Greeks employed salt as a preservative and the use of gypsum to clarify wines presented another opportunity for accident.

A ship-load of 3000 amphorae, 40 kilograms of 'roasted and powdered salt', a spoon, a poorly lit warehouse and a worried official could have set in train a crippling disaster for Athens.

Three Societies meet: *Mervyn Madge, president BSHP, welcomes Dr Margaret Rule, Mary Rose Trust at the evening meeting (November 15) when a maximum audience from BSHP, Pharmaceutical Society and the Pharmaceutical Group, Royal Society of Health heard Dr Rule speak on the recovery of the Mary Rose. At the end of the meeting a collection yielded over £200 towards the work of the Trust.*

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Alexander Dalmahoy
Chemist to Her Majesty

By G. D. Hopkinson

It is just over two hundred years since the death of Alexander Dalmahoy who should be acknowledged as one of the most significant figures in the history of the wholesale drug trade and the early development of the pharmaceutical industry. Hitherto his importance has not been recognised and although several writers have mentioned his name those references have been brief and often less than accurate. Moreover, his reputation has suffered from his being confused with one "Colonel Dalmahoy" a huckster and a quack who lived very close to the place where Alexander Dalmahoy was in business.

Alexander Dalmahoy was born about 1723, the son of William Dalmahoy who was the second son of Sir Alexander Dalmahoy, the 2nd baronet of Dalmahoy Castle in the County of Edinburgh.

William Dalmahoy — his elder brother being the heir to the title and the estates — such as remained of them — became a surgeon and apothecary, being apprenticed to Hugh Patterson of Edinburgh for five years from May 30th 1712. After completing his apprenticeship he moved to Southwark and it is in the records of the Society of Apothecaries that Alexander Dalmahoy, son of William Dalmahoy, surgeon, was bound apprentice from January 3, 1736 for eight years to Francis Dalby, citizen and apothecary of Ludgate Hill. The premium is recorded as being £50. On completion of his apprenticeship he was admitted to the Freedom of the Society of Apothecaries on January 7, 1744.

Thereafter we lose sight of Alexander Dalmahoy for a while but there is no doubt that he was in business on his own account at 12, Ludgate Hill in 1755. It is probable — though there is no written evidence of this — that during the intervening years he was in partnership with Dalby and later took over the business. Francis Dalby, incidentally, was probably the originator of Dalby's Carminative Mixture, a well known medicine at that time.

As already indicated Alexander Dalmahoy sprang from the Scottish nobility. His grandfather, the 2nd baronet married Alicia, daughter of John Paterson the last Archbishop of Glasgow. He was the nephew of the 3rd baronet and cousin to the 4th (both of whom also had the christian name Alexander). The 4th baronet was an officer in the French army.

Had he not pre-deceased his cousin — who died without issue — then the title would have passed to Alexander Dalmahoy, Chemist, of Ludgate Hill, London. As it was the baronetcy passed to his son, John Hay Dalmahoy who became the 5th baronet.

Sir John Hay Dalmahoy was a B.A. of the University of Oxford and subsequently took holy orders. He died on October 10, 1800 at Westerham, Kent and the relevant entry is to be found in the register of burials. He left no issue and with his death at the early age of thirty-two the title became extinct.

In a privately printed book *The Family of Dalmahoy of Dalmahoy* (1867) by Thomas Falconer (a copy of which is to be found in the National Library of Scotland) there is a footnote against the entry for Alexander Dalmahoy (the apothecary) which states that "his family ruined their estates and fortunes through their adherence to what they believed to be a public duty towards the Stuart family".

It is also recorded that the Dalmahoy family held the hereditary office of Under-Master of the (Scottish) Royal Household.

The book refers to Alexander Dalmahoy as "chemist of Ludgate Hill, London", and Sir Robert Douglas in the "Baronage of Scotland" describes him as "an eminent chymist in London." It would seem, therefore, that Alexander Dalmahoy's connection with the Scottish family can be taken as established beyond doubt.

And so, in 1755 Alexander Dalmahoy, descendant of the Scottish nobility, was in business at 12, Ludgate Hill, at the sign of the Glauber's Head.

Because, presumably, of his own family connections the doors of the England landed gentry seem to have been open to him and he married Elizabeth, daughter of John Board of Paxhill Park, Lindfield, Sussex. In addition to the unfortunately short-lived John Hay, they had three daughters one of whom, Sarah Hay Paterson Dalmahoy married Thomas Wyatt of Horsted Keynes, Sussex, and it is on record that their grandson, the Rev. Arthur Huart Wyatt was living in Sydney, Australia in 1867.

During most of his business life Alexander Dalmahoy described himself as "Chemist to Her Majesty" but it is difficult to determine just which queen this was, since for the whole of this period the throne of England was occupied by male sovereigns — George II and George III. Probably it was Queen Charlotte wife of George III. Moreover, if the Dalmahoy family was so beholden to the Stuart cause, it is to be wondered how he managed to obtain the royal appointment to an Hanoverian queen.

Be that as it may, Alexander Dalmahoy seems to have flourished. It has been said that he always wore white gloves when serving his customers (whether for reasons of hygiene or simply to keep his hands clean is not disclosed) and another writer refers to him as driving round London in a coach and four to advertise his wares. It is probable, however, that these references should be to the quack 'Colonel Dalmahoy' who sold his nostrums in nearby Water Lane (now Blackfriars Lane) and who was said to have "specifics for every ill as well as face washes, love philtres and charms" and who was the subject of contemporary street ballads — some of them scurrilous — one of which is quoted in full in C.J.S. Thompson's book *The Quacks of Old London.* Perhaps the confusion between Alexander Dalmahoy and 'Colonel Dalmahoy' can be cleared once and for all if it is pointed out that Alexander Dalmahoy was in

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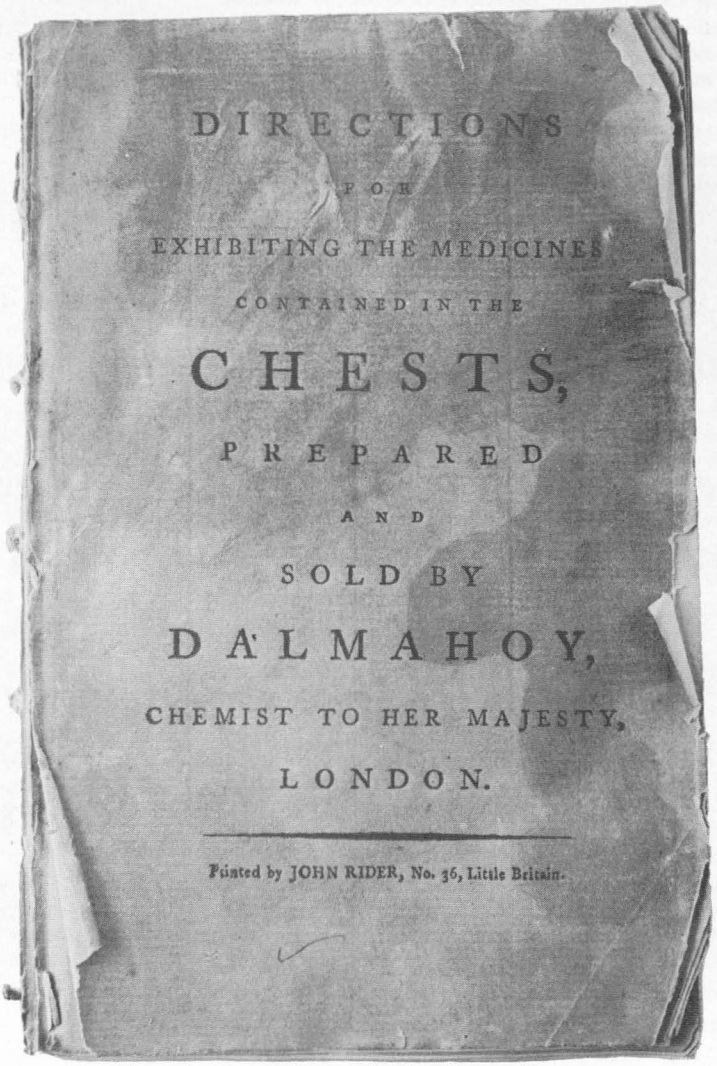

business from 1755 until 1780 whereas 'Colonel Dalmahoy', according to McConaghy's *Evolution of medical Practice* flourished between 1759 and 1817 — although it must be pointed out that McConaghy himself does confuse the two in his comments. It seems probable that Colonel Dalmahoy used that name to "cash-in" on the reputation of Alexander Dalmahoy. This was a very common practice until quite recent times and there was never a popular remedy that did not suffer in this way — hence the legend common on most patent medicine labels, "None Genuine Without the Signature ....."

Alexander Dalmahoy was certainly no quack but a man of considerable skill and knowledge. He was well known for his chests of medicines and — about 1770 — he published a handbook to go with these chests containing descriptions of most of the then known drugs and their uses — and this nearly a century before the first edition of the British Pharmacopeia appeared. Judging by the various tropical diseases mentioned in Dalmahoy's book it would seem that his medicine chests were widely used abroad — presumably by sea captains and by some of the early empire builders.

The book's preface notes that —

> *"This is not intended as a complete system for the cure of diseases, much more still remains in the hands of the skilful physicians. To alleviate them is highly meritorious, and must meet the approbation of the liberal minded. The possession of a medicine chest also puts it into the power of its possessor to exercise the greatest benevolence by administering to the diseases of the poor and indigent neighbourhood, in imitation of the Good Samaritan, pour oil into the wounds of the afflicated and distressed, and alleviating the poignancy of misery and disease."*

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DROWNING.

Hold the noſtrils, and blow into the mouth of the perſon taken out of the water, either with your own breath, or with a pair of bellows with your whole force; then preſs the breaſt with your hand, and continue this repeatedly, in imitation of reſpiration; and at the ſame time ſtrip and wrap him in a blanket, and rub him with warm and dry cloths all over, as hard as poſſible.—Bring him to the air and to heat. Apply hot irons or hot bricks to his feet, and rub his temples and ſtomach with

Hartſhorn or brandy.

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Under the heading "Death from Drowning" he describes almost word for word the modern method of Expired Air Resuscitation or the 'Kiss of Life' as it is generally known.

> *"Hold the nostrils, and blow into the mouth of the person taken out of the water, either with your own breath, or with a pair of bellows, with your whole force; then press the breast with your hand, and continue this repeatedly, in imitation of respiration .....*"

It is the first known reference to the 'Kiss of Life' and for that, if for nothing else, Alexander Dalmahoy deserves a place in the reference books.

But perhaps Dalmahoy's greatest gift to his own and succeeding generations of the suffering and afflicated was his product 'Eau de Mente de Dalmahoy' or 'Dalmahoy's Cordial Peppermint Water.' It was, he said, prepared from the "finest white oil of peppermint, distilled from plants grown at Mitcham in which the raw peppermint flavour is skilfully and effectually overcome." It is very probable that it also had a very generous alcohol content, which might have accounted for the fact that it was in vogue for more than 150 years. The ownership of the product passed to Dalmahoy's successors and it was still being sold — and still displaying on the label the Royal Coat of Arms and the legend 'Chemist to Her Majesty' — as late as the 1930s.

Another of Dalmahoy's products "The Curious Smelling Bottle called Le Sel Poignant d'Angleterre" was recommended for a wide range of human afflications including — to mention only a few — "faintings, swoonings, palpitations of the heart, epileptic fits, apoplexies, yawnings, croakings and tingling of the ear." Leaflets advertising the preparation were printed separately in English and French and copies are to be found in the library of the Wellcome Institute for the History of Medicine.

Dalmahoy advertised several of his products with leaflets printed separately in English and French and some of his products had separate labels in the English and French languages. It would therefore seem to be a reasonable assumption that he had developed a useful export business and if that was so he must have been one of the pioneers of the export effort of the British pharmaceutical industry.

He was also known for his "Incomparable Plate Powder" for cleaning and preserving silver and for his range of horse medicines which "were originally planned by a physician who had made the diseases of horses his study, and who was desirous of raising farriery into a regular science. Instead of the base and inferior drugs generally used in horse medicines, these are composed of the best and choicest kinds ....."

But to return to Alexander Dalmahoy's distinguished family. There is record of a Hendy de Dalmahoy living in 1296 and a Sir Alexander de Dalmahoy (Knight) who lived in the reign of James II (of Scotland). By the end of the 15th century the 'de' seems to have been dropped and thereafter the family name is recorded simply as Dalmahoy. There was a Sir John Dalmahoy who lived in the 15th century, another Sir John Dalmahoy who was knighted by James VI and yet another Sir John Dalmahoy the first holder of the baronetcy which was created by Charles II in December 1679.

Another interesting member of the family was Thomas Dalmahoy who was Member of Parliament for Guildford from 1661 to 1678. In 1655 he married the Duchess of Hamilton (widow of the second Duke of Hamilton who lost his life at the Battle of Worcester.) On her death in 1659 he inherited substantial estates around Guildford. She also left him four step-daughters with whom he did not get on too well. In his own will he bequeathed to one of them — Lady Southesk — "twenty shillings of lawful English money and no more, because she was unjust to me by endeavouring by all unlawful means to have ruined both my reputation and fortune by calumnies, and aspersions, traducing me to all people of her acquaintance ....." The other three step-daughters — Lady Almound, Lady Colmar and Lady Blair — seem to have fared no better and to have received no share of the estates that once belonged to their mother.

Around 1673 Thomas Dalmahoy had been involved in the frequent quarrels between the King and Parliament and on one occasion it was moved in the House of Commons that he be committed to the Tower of London. However, the motion was negatived and Thomas Dalmahoy continued to enjoy his freedom — together with the estates of his late wife, and the attentions of her four troublesome daughters.

An interesting and distinguished family, the Dalmahoys — and none more interesting nor more distinguished than Alexander Dalmahoy, Chemist, at the sign of the Glauber's Head in Ludgate Hill, London, and sometime Chemist to Her Majesty.

He seems to have given up business about 1780 and retired to Higham Hill, Essex, where he died on October 10, 1783 — this fact being noted in the Medical Directory for that year. His widow, Elizabeth , then returned to her family home at Paxhill Park, Lindfield where she died in 1788.

But the business which Alexander Dalmahoy founded in 1755 was to have a future no less interesting and exciting than its past. On Dalmahoy's retirement the business passed into the hands of William Stock who expanded it by taking on premises at 22, Ludgate Hill, in addition to number 12. Later the business passed into the hands of James White — a member of the Salter's Company — and one Cautherley who traded as White & Cautherley.

In 1826 the business became White, Cautherley and Hill when they took into partnership their former apprentice Arthur Stephen Hill. When the two senior partners retired the business traded as Arthur S. Hill, and later as Arthur S. Hill and Son.

Arthur S. Hill & Son had by this time moved the business to Southwark Street and towards the end of the 19th century amalgamated with a firm called Davy, Yates and Hicks. They then traded as Davy, Hill and Co. until 1909 when they merged with three other leading wholesale druggists to become The British Drug Houses Ltd.

References.
'History of Pharmacy in Britain' — Leslie G. Matthews (1926)
'The Quacks of Old London' — C.J.S. Thompson (1928)
'The Family of Dalmahoy of Dalmahoy' — Thomas Falconer (1867)
'Directions for Exhibiting the Medicines Contained in the Chests Prepared & Sold by Dalmahoy, Chemist to Her Majesty' — Alexander Dalmahoy. (Printed by John Rider, 36 Little Britain. c.1770)
(The only known surviving copy of this book, now regrettably in poor condition, is in the archives of BDH Chemicals Ltd. of Poole, Dorset).

I am indebted to Dr. T.D. Whittet, C.B.E. and to Dr. Juanita Burnby who have kindly helped me with information about Alexander Dalmahoy. My thanks are also due to Miss M. Deas of the National Library of Scotland, Mr. John S. Shaw of the Scottish Record Office, and Mr. E.J. Freeman, Librarian at the Wellcome Institute for the History of Medicine, for help in my researches.

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Sesquicentenary Death of David Douglas

By Dr. T. D. Whittet

David Douglas, the famous Scottish botanist after whom the Douglas firs were named was killed by a bull on the island of Hawaii on July 12, 1834.

He was born at Scone, Perthshire, in 1799 and, after an apprenticeship to the gardener of Scone Palace, he worked at Valleyfield near Culross, Fife and then at the Botanical Gardens in Glasgow. There his knowledge and keeness were recognised by Professor, later Sir, William Hooker, who recommended him to the Royal Horticultural Society to act as a plant collector in China. The planned excursion to that country was cancelled and Douglas was sent to the Eastern United States to collect fruit trees and botanical specimens.

He travelled from New York to the head of Lake Erie. Later he made extensive botanical excursions to what are now the States of Oregon and the Province of British Colombia. There were then no more than 400 Europeans in that vast territory of primeval forest. He also explored lower California.

In 1827 he travelled from Fort Vancouver on the West coast of Canada over the Rockies and across the continent to York Factory on Hudson's Bay, a journey of 2,900 miles, a fantastic achievement when there were no roads and few tracks. At Fort York he met Sir John Franklin with whom he sailed to England.

Throughout his short life he had many adventures and achievements. He was the first person to climb a peak of the Canadian Rockies, the Blue Mountains of America and Mount Roa in Hawaii. He made many contributions to botany and natural history and introduced 254 specimens of plants into the United Kingdom including the Douglas fir and the flowering red currant. He kept diaries of his journeys which are of great interest to naturalists and historians.

He received many honours including Honorary Fellowships of the Linnean, Geological and Zoological Societies "in consequence of (his) great service . . . to natural history."

Several plants were named after him and he gained a place in the Dictionary of National Biography. He has been described as "one of the greatest exploring botanists of all time."

To commemorate the sesquicentenary John Davies, Conservator of Forests for the South of Scotland has published "Douglas of the Forests" an account of the explorer's North American journals.

Dr. T. Douglas Whittet has presented copies of this book to the libraries of the Pharmaceutical Society and its Scottish Department and of the Society of Apothecaries.

Dr. Whittet's three-greats-grandfather was the grandfather of David Douglas and the eldest son of the family has been called Douglas since Jean Douglas, second cousin of David, married Thomas Whittet in 1844. Copies of the family tree have been placed in the books.

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